NH WORK TASK 89-5.2.2

TOWN OF STRATHAM

WATER RESOURCES MANAGEMENT AND PROTECTION PLAN

1990

Supplement to the Stratham Master Plan

Prepared for
The Stratham Planning Board

Prepared by
The Rockingham Planning Commission

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ATTACHMENT #16

WATER RESOURCE MANAGEMENT AND PROTECTION PLAN

for the

Town of Stratham Master Plan

Prepared for the
STRATHAM PLANNING BOARD

by the

ROCKINGHAM PLANNING COMMISSION

June, 1990

U.S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
2234 SOUTH HOBSON AVENUE
CHARLESTON, SC 29405-2413

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WATER RESOURCE MANAGEMENT AND PROTECTION

INTRODUCTION

This component of the Town of Stratham Master Plan addresses the requirements, established by the New Hampshire Office of State Planning under the authority of RSA 4-C:20,I, for the preparation of local water resource management and protection plans.

The purposes of this chapter are to identify and describe surface and groundwater resources; to identify existing and potential threats to these resources; to evaluate the adequacy of water resources to meet the current and future needs of the Town; to evaluate existing local programs which have the potential to impact water resources; and to identify regulatory and nonregulatory programs that could further enhance water resource management and protection efforts.

The protection and wise use of water resources are of critical concern to the Town of Stratham. With virtually every person in Town dependent on private wells for domestic, public, and business use, the quantity and quality of Stratham's groundwater must be protected from depletion and/or contamination. Other Town water resources, such as rivers, streams, and wetlands, are important not only because they are often hydrologically related to groundwater, but because they provide ecological, scenic and recreational value to the Town as a whole.

In general, there is a direct relationship between land use and water quality. Uses in areas with poor suitability can degrade and contaminate both surface and groundwater, increase flood hazards, destroy water-based wildlife and interfere with scenic and recreational values. It is the responsibility of the Town to take reasonable precautions to protect all water resources from incompatible uses and, in so doing, protect the health and general welfare of the community.

I. SURFACE WATER RESOURCES

Watersheds

The Town of Stratham has approximately 330 acres of surface water, which is equivalent to 3.3 percent of its total acreage. As depicted in Map A - "Regional Watersheds", the Town contains portions of three regional watersheds - the drainage areas for the Squamscott River, Great Bay, and the New Hampshire Coast. This information was taken from the "Regional Watersheds Map" developed by the Rockingham Planning Commission in February 1989. The sources used for this map were 7.5 minute topographic maps, covering Rockingham County, published by the U.S. Geological Survey between 1973 and 1981. The following paragraphs provide a general description of each regional watershed.

a. Squamscott River watershed: The Squamscott River has a total length of about 6.2 miles. The River is tidal and is primarily fed by the Exeter River. The Squamscott River watershed covers portions of four towns - Exeter, Newfields, Newmarket, and Stratham. The total area is approximately 12,019 acres (18.8 square miles). The area of the watershed contained within Stratham is about 5,730 acres (8.9 sq. mi.).

b. Great Bay watershed: The Great Bay estuarine system, covering approximately 17 sq. mi. is one of the largest estuaries along the east coast of the United States. This system is formed by the convergence of seven rivers: the Salmon Falls, Cocheco, Bellamy, Oyster, Lamprey, Squamscott, and Winnicut with a total watershed area of 930 square miles.

   In order to isolate a meaningful drainage area that was within the Rockingham Planning Region, the Great Bay watershed was delineated to cover portions of six towns - Greenland, Hampton, Newington, North Hampton, Portsmouth, and Stratham (as shown on Map A). The watershed area is approximately 74,930 acres (117 sq. mi.). The land area of the Great Bay watershed contained within Stratham is about 690 acres (1.1 sq. mi.).

c. Coastal watershed: The receiving water bodies of the Coastal Watershed are the Piscataqua River and the Atlantic Ocean. The Piscataqua River originates in Rollinsford, NH and is fed by the Salmon Falls, Cocheco, and Bellamy Rivers. The Piscataqua River is tidal and flows along the shores of Newington, Portsmouth, and New Castle for about seven miles before emptying into the Atlantic Ocean. New Hampshire's oceanfront shoreline is approximately 18 miles long. The Coastal watershed covers portions of 11 towns within the region - Seabrook, Kensington, Hampton Falls, Hampton, Exeter, Stratham, North Hampton, Greenland, Rye, Portsmouth, and Newington. The area of the Coastal watershed is about 50,100 acres (78 sq. mi.). The area of the watershed within Stratham is only about 90 acres (0.14 sq. mi.).

Watersheds Within Municipal Boundaries

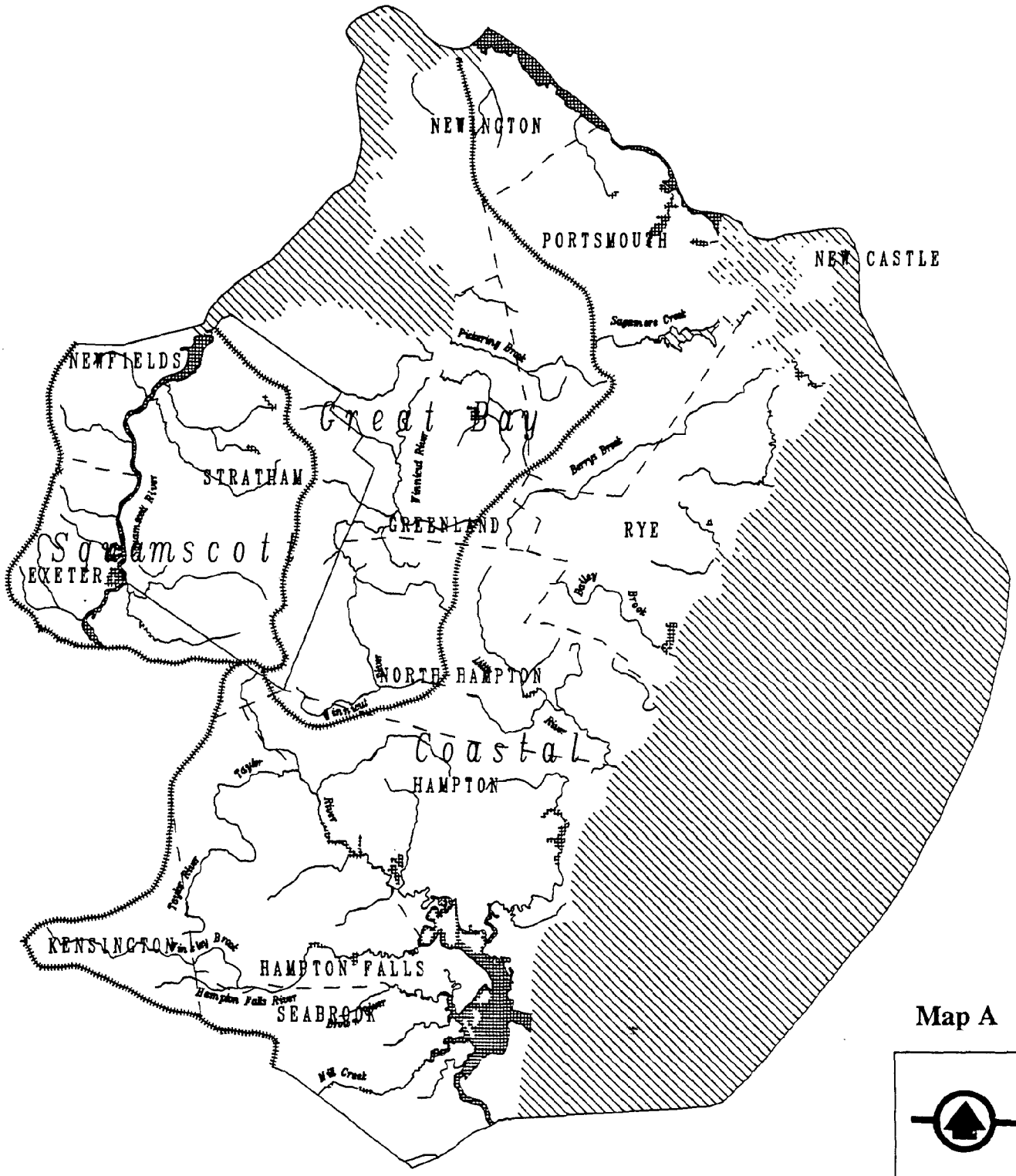
The Great Bay and Squamscott River watersheds were each divided into two sub-watersheds within the Town: Great Bay, Winnicut River, Squamscott River, and Dearborn Brook, respectively. Sub-watersheds were not delineated for the Coastal watershed. These drainage areas are depicted on Map B - "Watersheds and Perennial Water Bodies" (source: Exeter, Hampton, Newmarket, and Portsmouth, N.H. Quadrangle; 7.5 minute topographic maps; U.S. Geological Survey, 1973).

REGIONAL WATERSHEDS

Source: USGS 1:100000 DLG Files

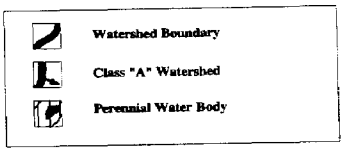
Prepared by the Rockingham Planning Commission
June 1990
Scale 1" = 2.25 miles SRG

Regional Watersheds



Map A

Watersheds and Perennial Water Bodies
Map B



Prepared by the Rockingham Planning Commission
June 1990

Sources: Exeter, Hampton, Newmarket, and Portsmouth 7.5 minute quadrangles, U.S. Geological Survey.

"Dam Data for Rivers and Streams" N.H. Water Resources Board; February 1989.

Roads Updated September 1988
by the Rockingham Planning Commission

— • — • — TO BE CONSTRUCTED

Prepared by
Southeastern New Hampshire Regional Planning Commission
3 Water Street
Exeter, New Hampshire 03833
January 1976

"The preparation of this map was financially aided through a Federal grant from the Department of Housing and Urban Development, under the Comprehensive Planning Assistance Program authorized by Section 701 of the Housing Act of 1954 as amended

1000 0 1000 2000 3000
SCALE 1 inch = 1000 feet

All of Stratham's water bodies have a legislative classification of "B", except for Dearborn Brook which has Class "A" waters (source: Legislative Classification of Surface Waters map; N.H. Water Supply and Pollution Control Commission, 1986). Class "A" water has uniformly excellent quality and requires only disinfection in order to be used as a drinking water supply. Class "B" water is of lower quality and requires more treatment in order to be potable.

A description of each drainage area is presented below.

a. Squamscott River: The tidal Squamscott River serves as Stratham's western border. It is also the Town's largest river, and is among the largest of the Seacoast Region. A unique feature of the Squamscott River is its oxbow, a landform created by the meandering path of the River. In 1880, the Oxbow was cut through to create a straight channel for shipping (source: The Exeter-Squamscott River of Many Uses; O. Tardiff; printed by CGC, Rye, N.H.; 1986). At that time, and during subsequent dredgings of the River, the Oxbow was substantially filled with dredging spoils. Today, a canoe-sized boat can travel the Oxbow, but only during high tide.

   Within Stratham, the Squamscott River sub-watershed is 5,730 acres (9.0 sq.mi.). The Squamscott River flows for 5.2 miles, from an elevation of approximately 5 feet above mean sea level (MSL) to sea level, before emptying into Great Bay. No dams are located along the River.

   According to the New Hampshire Water Quality Report to Congress 305(b), the Squamscott River is the only perennial water body in Stratham that does not meet its legislative classification for water quality of "B" (source: N.H. Department of Environmental Services, Water Supply and Pollution Control Division; April 1988). The report states that the water quality problems of the Squamscott River are caused by the Exeter Wastewater Treatment Facility. However, the treatment plant has recently been upgraded (1989), which should mitigate its impact to the River.

   Twelve perennial tributaries, which originate in Stratham and flow in a westerly direction, flow into the Squamscott River (which is approximately at sea level). These perennial water bodies include: Jewett Hill Brook, Mill Brook, Parkman Brook, Wheelwright Creek, and eight unnamed streams (coded as S1 to S9 on Map B and Table 1). Of these streams, only Mill Brook and stream "S-5" have dams (as depicted on Map B).

   1) Jewett Hill Brook: Jewett Hill Brook originates just south of Jewett Hill at 150 feet above MSL and has a total length of 2.2 miles.

   2) Mill Brook: Starting at High Street, Mill Brook is at an elevation of 130 feet, and flows for 3.6 miles to the Squamscott River.

   3) Parkman Brook: Parkman Brook originates between Bunker Hill Road and Stratham Heights Road, at 90 feet above MSL. The Brook flows for 2.2 miles to the Exeter town line, and ultimately converges with Wheelwright Creek at 15 feet above MSL.

   4) Wheelwright Creek: Wheelwright Creek marks the southwestern border of Stratham. Within Stratham, the Creek is only 500 feet and is at an elevation of 10 feet above MSL.

Stratham's Squamscott River watershed also contains three naturally-occurring ponds that are unnamed and relatively shallow (coded as S-P1 to S-P3 on Map B). In addition, Stratham's Squamscott River watershed contains a man-made pond - Mill Pond. Mill Pond has an elevation of 30 feet, an area of 2.5 acres, and is located at the traffic circle where Routes 101 and 108 intersect. Specific data for Stratham's unnamed ponds are as follows:

S-P1: Located just south of Jewett Hill, at an elevation of 150 feet, and with an area of 12 acres.

S-P2: Located southwest of Stratham Hill, at 150 feet above MSL, and has an area of 6 acres.

S-P3: Also located next to Stratham Hill, this pond is 3 acres, and is at an elevation of 150 feet.

b. Dearborn Brook: The Dearborn Brook sub-watershed is located in the southern part of Stratham. Within Town, the watershed covers about 570 acres (0.9 sq. mi.). Dearborn Brook starts at 90 feet above MSL and flows westerly for 2,500 feet, and drops 35 feet in elevation, before crossing into Exeter. A dam is located 1.3 miles downstream in Exeter, thereby forming the Exeter Reservoir. The Town of Exeter uses the reservoir as an auxiliary water supply during periods of high demand.

c. Great Bay: The northern tip of Stratham contains the southwestern edge of Great Bay. The Town has approximately 3,000 feet of shoreline along the Bay. The total water surface of Great Bay covers 5,696 acres (8.9 sq. mi.) at mean high water and 2,688 acres (4.2 sq. mi.) at mean low water (source: Great Bay National Estuarine Research Management Plan - Draft, N.H. Office of State Planning, January, 1989). Approximately 50% of the aerial surface of Great Bay is exposed as mudflat at low tide.

The area of Stratham that drains into Great Bay is located in the north-eastern part of Town, and has an area of 690 acres (1.1 sq.mi.). Two streams drain this area: 1) Brackett Brook - which is not dammed and flows for 300 feet into Greenland at an elevation of 95 to 90 feet above MSL; and 2) Foss Brook - which flows freely for 1,000 feet, from an elevation of 80 to 70 feet, into Greenland.

d. Winnicut River: Within Stratham, the Winnicut River sub-watershed is 2,070 acres (3.3 sq. mi.). As is true for the Squamscott River, the Winnicut River is one of the seven major rivers that empty into Great Bay. The Winnicut River originates at the southern tip of Stratham (at about 70 feet above MSL) and flows for only 100 feet before entering North Hampton. After flowing through North Hampton and Hampton, for a total distance of about 3.5 miles, the River flows back into Stratham for 0.8 miles. The River then flows out of Town (at 35 feet above MSL) and back into North Hampton, Greenland and finally Great Bay. A nine-foot dam is located along the Winnicut River in Stratham to form the Winnicut Mills Pond (as depicted on Map B).

The Winnicut River is fed by seven free-flowing perennial tributaries which originate in Stratham and flow in an easterly direction: Thompson Brook, Willow Brook, Winniconic Brook, Marsh Brook, and three unnamed streams (coded as W-1, W-2, and W-3 on Map B and Table 1).

1) Thompson Brook: Starting at Lovell Road, Thompson Brook is at 160 feet above MSL. The Brook flows for about 3,000 feet and drops 70 feet before entering Greenland. The Brook reappears in Stratham for another 600 feet until it converges with Willow Brook at the Greenland town line.

2) Willow Brook: Willow Brook originates at Willow Brook Avenue at 90 feet above MSL, and flows for 3,500 feet to Thompson Brook at an elevation of 30 feet.

3) Winniconic Brook: Within Stratham, the Winniconic Brook is approximately 2,000 feet long. The Brook drops from 35 feet to 30 feet above MSL at the Greenland border.

4) Marsh Brook: Marsh Brook begins at Barker Road and flows for 4,000 feet, from an elevation of 60 feet, to the Greenland town line at 35 feet above MSL.

Stratham's Winnicut River watershed also contains two man-made ponds: 1) Winnicut Mills Pond (previously cited) - which has an area of about 3 acres and is at an elevation of 35 feet; and 2) an unnamed pond (coded as W-P1 on Map B) - which covers about three acres and is at 75 feet above MSL.

Table 1
Unnamed Perennial Streams

Stream	Location	Length (ft.)	Elevation (ft.)
W-1	East	3,000	70 to 35
W-2	East	3,750	55 to 35
W-3	East	4,000	75 to 35
S-1	S.West	1,500	50 to 20
S-2	S.West	4,500	60 to 10
S-3	S.West	4,500	40 to 10
S-4	West	2,500	40 to 10
S-5	West	4,500	80 to 5
S-6	Central	5,000	70 to 45
S-7	N.West	2,500	15 to 5
S-8	N.West	2,750	40 to 10
S-9	North	6,000	150 to 50

Note: "Length" is the length of the stream within Stratham. "Elevation" is the stream's elevation, above mean sea level, within Stratham.

e. Coastal: The Coastal sub-watershed is located in the southern part of Town and, as stated earlier, covers only 90 acres (0.14 sq.mi.). No perennial streams within Stratham drain this area.

Table 2 - "Acreage of Wetlands and Floodplain Areas" - presents a breakdown of the acreage of floodplain areas, and poorly drained and very poorly drained soils within Stratham's five sub-watersheds. The areas for muck

and ponded soils, both of which are classified as very poorly drained soils, are also inventoried.

Table 2
Acreage of Wetlands and Floodplain Areas

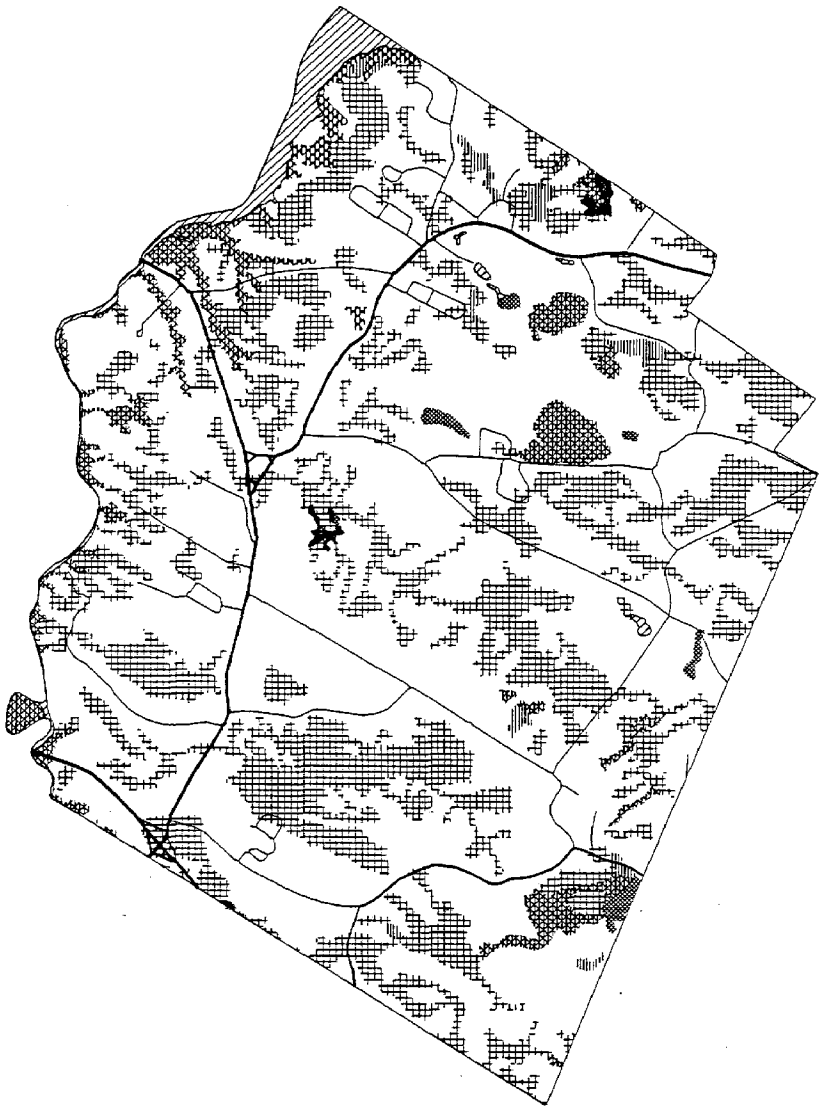
Regional Watersheds:	Squamscott	Winnicut		Coastal
Sub-Watersheds	Squamscott	Dearborn	Great Bay	Winnicut	Coastal
Poorly Drained Soils	1,422	193	173	720	50
Very Poorly Drained Soils	458	27	100	199	0
Muck	14	8	43	37	0
Peat	407	14	40	128	0
Ponded	17	0	0	34	0
Other	20	5	17	0	0
Floodplain	380	14	0	115	0

Map C - "Wetland Soils" - depicts the locations of wetland areas throughout Stratham. The soils information was acquired from the Complex Systems Research Center at the University of New Hampshire in February 1990. The soils delineation is based on field work, conducted by the USDA Soil Conservation Service, completed in 1985. Wetlands are defined as poorly and very poorly drained soils. Much of these wetlands are contained in Stratham's 100-year flood zones, which are depicted in Map D - "Flood Hazards and Bedrock Geology." Flood hazard boundaries are those shown on the Town of Stratham "Flood Insurance Rate Map" (effective date: May 17, 1989), published by the Federal Emergency Management Agency (FEMA). In general, the 100-year flood zone surrounds the Squamscott River and the major streams throughout Town. Another large flood zone lies east of Rollins Hill in the southern part of Town.

Development should be located away from wetlands and floodplains. The filling of and use of wetlands for building construction not only destroys wetlands and their benefits, but may also lead to groundwater contamination. Building within a flood zone may also reduce the floodplain's capacity to absorb and retain water during periods of excessive precipitation and runoff. Moreover, in regard to building within floodplains, contamination may result from flooding damage to septic systems. Without specific flood-proofing design and construction, development within floodplains poses threats to public health, safety, and welfare.

In accordance with N.H. Code of Administrative Rules (Wr 700), the Water Management Bureau (of the Water Resources Division, N.H. Department of Environmental Services (DES)) compiles data on all water users throughout the State that withdraw or discharge more than 20,000 gallons of water per day. According to the Bureau, the Town of Stratham presently has no major users of surface water.

Town of Stratham -- Wetland Soils



Water

Poorly Drained

Muck -- Very Poorly Drained

Peat -- Very Poorly Drained

Ponded -- Very Poorly Drained

Other Very Poorly Drained

Map C

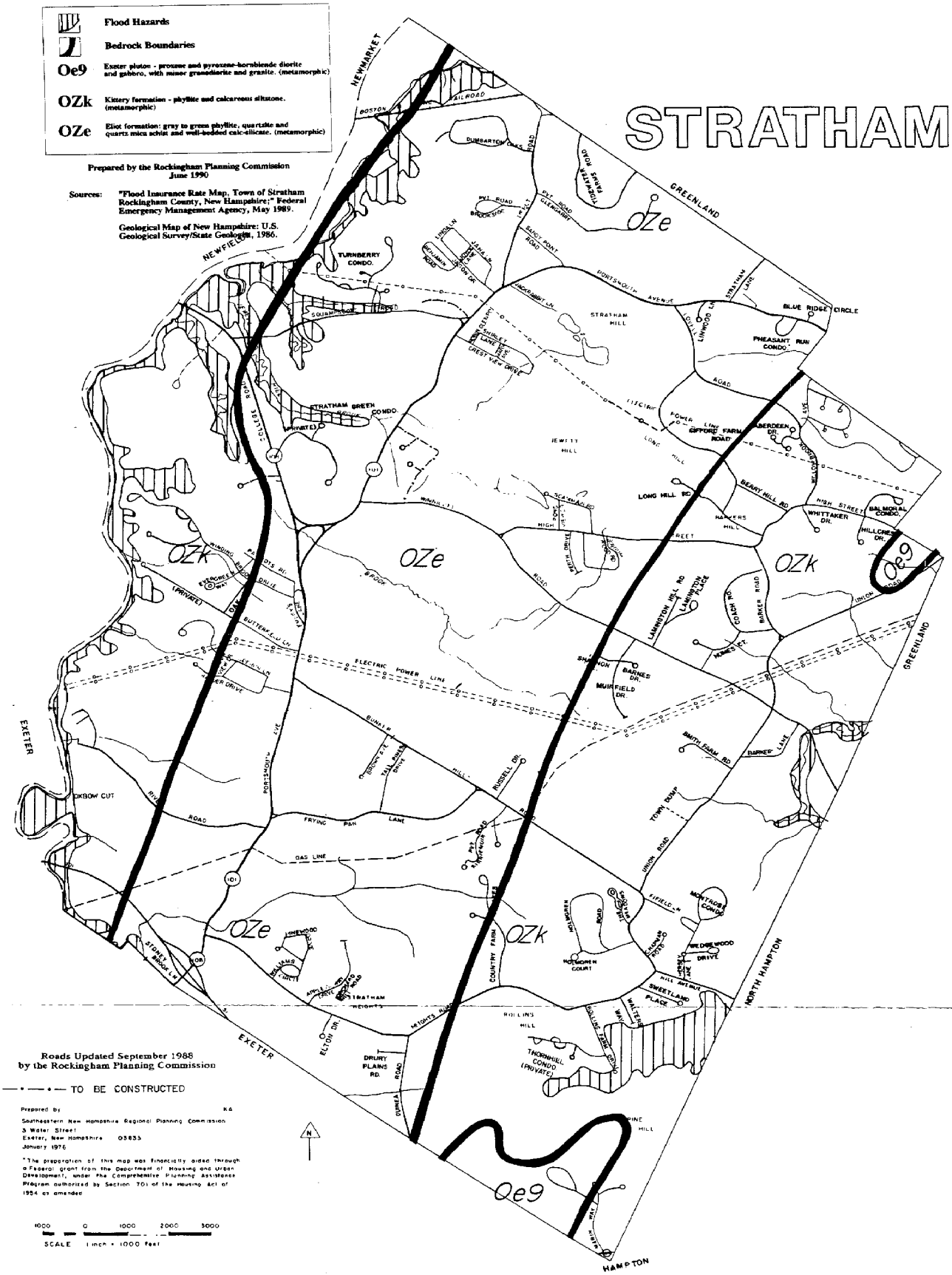
Scale in Miles

0 2/3 1 1/3 2

Sources: Complex Systems Research Center, UNH; February 1990. Soils delineation based on field work, conducted by the USDA Soil Conservation Service, completed in 1985. Preliminary Data - Subject to Change.

Prepared by the Rockingham Planning Commission, May 1990. SRG

Flood Hazards and Bedrock Geology
Map D



Potential Surface Water Supplies

The two largest fresh water bodies in Stratham, Mill Brook and the Winnicut River, have a legislative classification for water quality of "B" which means they would require adequate treatment before being suitable for public consumption. According to the 1988 New Hampshire Water Quality Report to Congress 305(b), Mill Brook and the Winnicut River are in compliance with the water quality standards set by their legislative classification. However, due to their small flows, and costs for treatment, these water bodies are unsuitable as a public drinking water supply within Stratham. For the foreseeable future, the most economical and practical source for a municipal water supply in Stratham would be from groundwater, which typically requires much less treatment.

II. GROUNDWATER RESOURCES

The term "aquifer" is herein defined as a geologic formation, or part of a formation, that is capable of yielding quantities of groundwater usable for municipal or private water supplies.

Stratified Drift Aquifers

Stratified drift aquifers are the most likely source of groundwater suitable for municipal water supplies. Stratified drift was formed by glacial material that was transported and deposited during the melting of the glacier. Its materials, ranging in size from sands to cobble gravels, were worked and reworked by flowing water and, as a result, are well sorted. They are loose and coarse in texture. These characteristics result in high porosity and hydraulic conductivity - allowing groundwater to flow through quite readily. Stratified drift aquifers have potential to yield large volumes of water to a well and are therefore prime sources of water for municipalities and other large-volume users.

The groundwater resources of Stratham have been investigated by two federal agencies: the U.S. Army Corps of Engineers (USACE) and the U.S. Geological Survey (USGS). Both of these agencies based their findings on the surficial geology of the Town. They assumed that areas in Town which contained stratified drift formations would yield the greatest amount of groundwater.

The USACE classified southeastern Stratham as having an aquifer, which was defined as "an unconsolidated geologic formation containing a minimum of 20 feet of saturated permeable material, which will yield significant quantities of water to wells for public usage. Generally, this range is in the order of 150 gpm per well" (source: Groundwater Assessment Study for 50 Communities in Southeastern New Hampshire, USACE; September, 1980).

Three years previous to the USACE report, the USGS also identified the same general area of Town as having high potential to yield water. Wells located "within these areas should yield sufficient quantities of water to meet or augment supplies for municipal and/or industrial purposes" (source: Availability of Groundwater in the Lower Merrimack River Basin, Southern New Hampshire, J.E. Cotton, USGS; 1977).

In addition to the sources described above, the N.H. State Geologist Office has mapped the stratified drift formations of Stratham. The surficial geology maps for the Exeter, Newmarket, and Portsmouth USGS quadrangles were finalized

in 1987, 1988, and 1989, respectively. The stratified drift formations were identified as: "glacial and post-glacial water-laid deposits"; and "stratified glacial sand and gravel".

The latest and most reliable source of information concerning stratified drift aquifers is from the recent groundwater mapping program conducted by the USGS. The USGS has characterized Stratham as having three primary aquifer areas, each having a transmissivity of less than 500 feet^2/day. Transmissivity is the rate at which water is transmitted through a unit width of aquifer under a unit of hydraulic gradient. It is equal to the product of hydraulic conductivity and saturated thickness (source: GroundWater Resources of the Lamprey River Basin, Southeastern New Hampshire; J.E. Cotton; U.S. Geological Survey, Water-Resources Investigations Report 84-4252; 1988). Complete information regarding these aquifer areas will be published sometime during 1990 as part of a water investigations report entitled: "Geohydrology and Water Quality of Stratified Drift Aquifers in the Exeter, Lamprey, and Oyster River Basins, Southeastern New Hampshire". The primary recharge areas of the aquifers described above are shown in Map E - "Aquifers".

As previously described under surface waters, the N.H. Water Management Bureau compiles data on all water uses which withdraw or discharge more than 20,000 gallons per day. According to the Bureau, the Town of Stratham presently has no major users of groundwater.

According to the Water Resources Division of the N.H. Department of Environmental Services (DES), 348 (bedrock) wells were reported as being completed between March 1984 and February 1989. The well log data is presented in the "Summary of Well Completion Report Data for the Town of Stratham", dated November 20, 1989, and is contained herein as Appendix I.

Map F - "Aquifers and Wells" - depicts the locations of 87 of these wells, which were mapped by the Water Well Board of the N.H. DES (denoted by circles). Of these, 38 are located within a stratified aquifer as identified by the USGS. However, every well was drilled through the stratified drift and into the underlying bedrock.

The only gravel-packed wells depicted in Map F are located in the southwest corner of Town. This area contains a field of 8 dug wells, ranging from 17 to 20 feet deep. These wells were Exeter's original water supply (Skinner Springs), and have yielded as much as 200,000 gpd. Pumping from the Skinner Spring wells has recently been reduced by Exeter due to an apparent bacterial problem, but they still serve as an auxiliary supply for the Town. (Source: "Town-wide Water Supply Report; Stratham, New Hampshire"; Dubois & King, Inc.; January 1989.)

Bedrock and Till Aquifers

The N.H. Department of Resources and Economic Development, in cooperation with the USGS and the State Geologist Office, has mapped the surficial geology of Stratham. This information is depicted in three maps (located at the State Geologist Office in Durham, N.H.) entitled: "Surficial Geology of the Portsmouth/Kittery Quadrangle, Rockingham County, N.H.", G.J. Larson, 1989; "Surficial Geologic Map of the Newmarket Quadrangle, Rockingham and Strafford Counties, New Hampshire", M. Delcore and C. Koteff; 1988; and "Surficial Geology of the Exeter Quadrangle, NH-MA", G.D. Gephart and J.P. Schafer, 1987.

Map E
Aquifers

Stratified Drift Aquifers

- U.S.G.S., Transmissivity < 500 feet squared/day
- U.S. Army Corp
- J.E. Cotton/U.S.G.S.
- New Hampshire State Geologist

Prepared by the Rockingham Planning Commission
June 1990

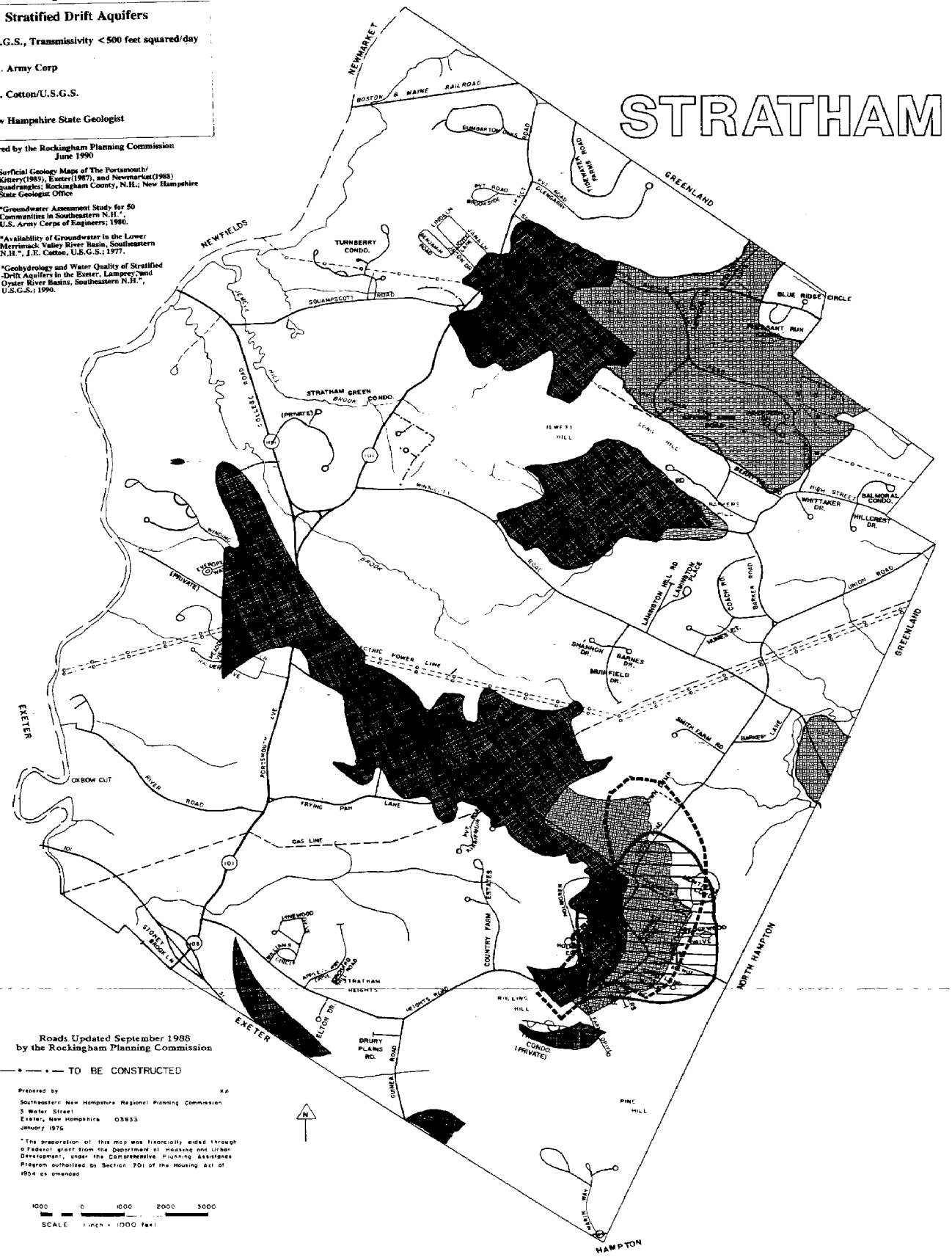
Sources:

Surficial Geology Maps of The Portsmouth/Kittery(1989), Exeter(1987), and Newmarket(1988) quadrangles; Rockingham County, N.H.; New Hampshire State Geologist Office

"Groundwater Assessment Study for 50 Communities in Southeastern N.H.", U.S. Army Corps of Engineers; 1980.

"Availability of Groundwater in the Lower Merrimack Valley River Basin, Southeastern N.H.", J.E. Cotton, U.S.G.S.; 1977.

"Geohydrology and Water Quality of Stratified-Drift Aquifers in the Exeter, Lamprey and Oyster River Basins, Southeastern N.H.", U.S.G.S.; 1990.



Roads Updated September 1988
by the Rockingham Planning Commission

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Prepared by KA

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1000 0 1000 2000 3000

SCALE 1 inch = 1000 feet

Map F
Aquifers and Wells

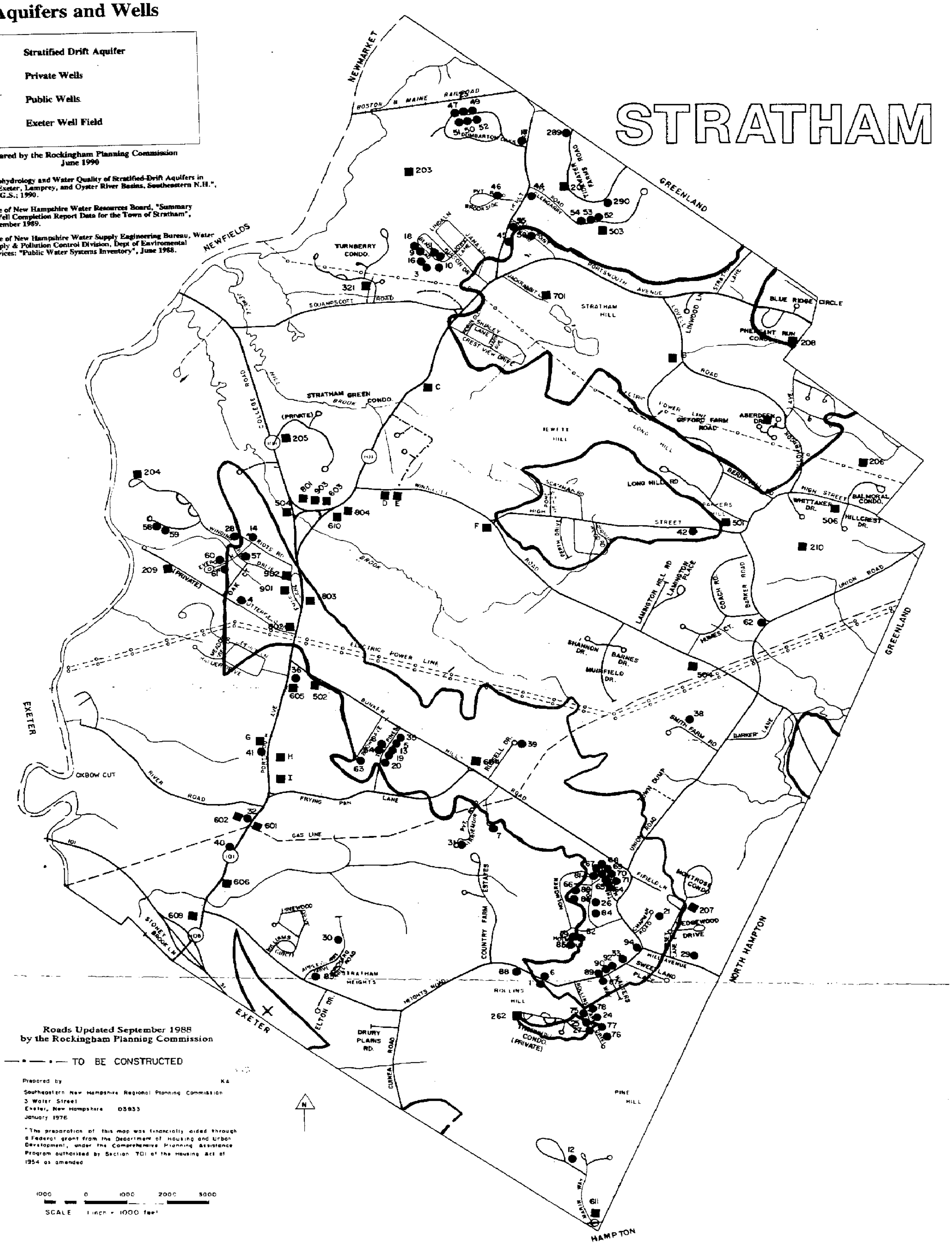
(symbol)	Stratified Drift Aquifer
●	Private Wells
■	Public Wells
☒	Exeter Well Field

Prepared by the Rockingham Planning Commission
June 1990

Sources: "Geohydrology and Water Quality of Stratified-Drift Aquifers in the Exeter, Lamprey, and Oyster River Basins, Southeastern N.H.", U.S.G.S.; 1990.

State of New Hampshire Water Resources Board, "Summary of Well Completion Report Data for the Town of Stratham", November 1989.

State of New Hampshire Water Supply Engineering Bureau, Water Supply & Pollution Control Division, Dept of Enviromental Services: "Public Water Systems Inventory", June 1988.



The surficial geology maps contain information regarding the location and extent of glacial (stratified drift), swamp, and till deposits. Till contains material of many different grain sizes, which results in limited porosity, transmissivity, and hydraulic conductivity. Given these qualities, till formations would not be suitable for municipal supply wells. Hence, these areas have not been delineated in this plan.

The bedrock geology of Stratham was determined using the "Geologic Map of New Hampshire", U.S. Geological Survey/State Geologist (1986), prepared at a scale of one inch equals approximately four miles. As previously stated, all of the 87 wells depicted in Map F have been drilled into bedrock. In addition, the fault lines of different formations are shown in Map D, "Flood Hazards and Bedrock Geology".

Stratham has three general types of bedrock:

1) Eliot Formation (OZe): gray to green phyllite, quartzite and quartz mica schist and well-bedded calc-silicate (metamorphic).

2) Kittery Formation (OZk): phyllite and calcareous siltstone (metamorphic); and

3) Exeter Pluton (Oe9): proxene and pyroxene-hornblende diorite and gabbro, with minor granodioute and granite.

Appendix I includes a list of well log data for Stratham. Map F depicts the locations of 49 wells (mapped by the N.H. DES) that are located outside of the stratified drift aquifers previously identified. Each of these wells are drilled into bedrock at depths ranging from 60 to 655 feet. Discharges from these wells ranged from 1 to 100 gallons per minute. (It should be noted that, on the average, stratified drift aquifers yield larger volumes of groundwater than do bedrock aquifers.)

Potential Groundwater Supplies

Groundwater is a very valuable resource for the Town of Stratham. It has the potential to provide the Town with drinking water for many generations to come. However, the resource is vulnerable to contamination or depletion if not properly managed and protected.

Groundwater quality can be impaired by a variety of materials. Sources of groundwater contaminants include landfills, commercial and industrial wastes, agricultural fertilizers, human sewage, road salting, etc. Groundwater quantity is reduced by contamination of available groundwater supplies, over-pumping in the aquifer zone, and increasing impervious surfaces such as roof tops and parking lots, thereby preventing recharge of the aquifer. These threats to groundwater are discussed further herein (see Section III).

During recent years there have been several reports published regarding the development of a water system in Stratham. The most current, and detailed, study was performed by Dubois & King, Inc. dated January 1989 and titled Town-wide Water Supply Report, Stratham, New Hampshire.

The Dubois & King report focused on three aquifer areas as being the most likely sources for a municipal water supply:

1) The aquifer area in the northeast part of Town which contains Stratham Hill and the "Gifford property";
2) The area along Bunker Hill Avenue, which is Stratham's largest aquifer recharge area; and
3) The area along the Exeter town line, which contains the Skinner Springs well-field.

The only groundwater quality information that is currently available, and has been taken from an identified aquifer area, is from the Skinner Springs aquifer. As previously stated, eight dug wells are located within this area. The water quality of these wells was tested by the USGS as part of the USGS Water Investigations Report (previously cited). In terms of inorganic constituents (e.g., chloride, manganese, iron, etc.), the water from this site proved to be of high quality. However, as mentioned earlier, these wells have experienced some bacterial problems.

In general, the only water quality problem that may be present in Stratham's other aquifer areas (other than bacteria) is elevated concentrations of iron and/or manganese. According to a 1981 groundwater study performed by the U.S. Army Corps of Engineers, naturally occurring iron and manganese constitute the most common groundwater problems in the Seacoast region (source: Southeastern New Hampshire Water Resources Study - Groundwater Assessment; U.S. Army Corps of Engineers, New England Division; March 1981). As far as is known, humans suffer no harmful effects from drinking water containing iron and manganese. However, both iron and manganese interfere with laundering, impart stains to plumbing fixtures, and cause difficulties to water distribution systems by promoting iron bacteria and forming precipitates (source: Chemistry for Environmental Engineering, Third Edition; C.N. Sawyer and P.L. McCarty; McGraw-Hill Book Co.; 1978).

Seven public water systems are located within Stratham's aquifer areas. Otherwise, the groundwater within these aquifer areas is primarily used for private homes. However, every water supply well for which data is available (from the Water Supply Engineering Bureau and the Water Resources Division) has been drilled into bedrock, rather than the stratified drift overburden.

Given the extent of vacant land within Stratham's aquifer areas, and the Town's development rate during the past 10 years, there is high potential for these aquifer areas to undergo further residential and commerical development. The following is a brief description of the potential type of development within the Town's primary aquifers, and is based on Stratham's Zoning Map and the Future Land Use Map of the 1985 Master Plan. (See Appendices IV and V for aquifer locations relative to zoning districts and future land use recommendations.)

- The Stratham Hill aquifer is zoned as residential, with a large portion zoned for manufactured housing. The Future Land Use Map of the 1985 Stratham Master Plan recommends no change in the zoning status for this area.

- Virtually all of the Bunker Hill aquifer is zoned as residential. The exception is a 40-acre strip that lies along the eastern side of N.H. Route 101 (the dimensions are approximately 2000' x 800'), which is zoned as Professional/Residential. The zoning of this area is consistent with the Future Land Use (FLU) Map. However, the FLU Map depicts much of the Bunker Hill aquifer as containing "medium density residential". Hence, the Town's Master Plan promotes a higher density of development over most of the

aquifer area. Until Town officials can fully assess the aquifer's potential as a municipal water source, the Master Plan should not recommend greater development densities in this area.

- The Skinner Springs aquifer is zoned as residential, and is depicted as such in the Future Land Use map.

The Town should continue to closely scrutinize and monitor development within its aquifer areas in order to prevent potential groundwater contamination or depletion. In the meantime, the Town should identify its most critical aquifer areas and protect them accordingly. The Dubois & King report (previously cited) recommended that:

> "...any further water resource evaluation be directed first at determining the adequacy of the stratified drift deposits on the "Gifford" property [contained within the Stratham Hill aquifer] as opposed to the bedrock to provide a suitable water supply. Further evaluation might include revision of the existing data base to include the most recent work [USGS and State] as it becomes available. [The USGS expects to publish information regarding Stratham's aquifers sometime during 1990.] Meanwhile, a subsurface test well program aimed at better defining potential aquifer characteristics should be conducted leading to the installation of a test pumping well to determine the various yield and water quality parameters so that maximum safe pumpage rates can be estimated relative to water supply needs."

The report's recommended minimum yield for a municipal well is 100 gpm (source: Town-wide Water Supply Report, previously cited; p.41).

It should be noted that the Dubois & King report used preliminary USGS estimates to assume that the Stratham Hill and Bunker Hill aquifers had transmissivity values of 0-1000 and 1000 to 2000 ft^2/day, respectively. As mentioned earlier, USGS's final transmissivity estimate for Stratham's aquifers is "less than 500 ft^2/day". Since Dubois & King overestimated the potential water yield of the Stratham Hill and Bunker Hill aquifers, their recommendations may need to be changed, or expanded to other potential aquifers.

Stratham's most practical source for future water supplies is from its aquifers because of their accessibility and relative purity. It is therefore necessary for the Town to protect its aquifers by enforcing measures which will promote groundwater recharge and reduce the risk of contamination. This course of action will help to safeguard an excellent source of drinking water for the future residents of Stratham.

III. POTENTIAL THREATS TO WATER RESOURCES

Potential Nonpoint Pollution Sources

A. Within Stratham

1. Existing Potential Pollutant Sources:

Nonpoint sources of pollution involve the diffuse discharge of wastes from sources that are widely spread, difficult to identify, and hard to control. Nonpoint pollution is typically produced from land runoff during times of rain and snowmelt.

The following is a general list that briefly describes potential nonpoint pollution sources, and their associated mitigation techniques, within the Town of Stratham:

Table 3
Nonpoint Pollution Sources and Remedies

Source	Remedy
subsurface sewage disposal	replacement and/or relocation;
agricultural runoff and infiltration	best management practices, e.g., concrete manure pits, no winter manure-spreading, etc.;
road salt storage and application	salt sheds, decrease salt to sand ratio, emphasize mechanical snow removal using plows, graders, etc., reduce frequency of application; increase use of calcium chloride and other de-icing chemicals;
storm runoff from construction sites	erosion control measures e.g., haybales, silt fences, straw mulch, etc.;
storm runoff from parking lots	catch basins which trap grit, oil and/or grease;
sediments from silted-in catch basins and detention ponds	maintenance programs
application of fertilizers and pesticides to farmland, gardens, and lawns.	integrated pest management, e.g., soil testing, biological pest control, timing of lawn care, etc.
runoff/leachate from junkyards and abandoned landfills	drainage collection/treatment systems, and proper disposal of hazardous materials, e.g. battery acid, gasoline, etc. with a certified hauler;
leaking underground storage tanks	remove abandoned tanks, monitor and regulate existing tanks;
roadside application of insecticide for mosquito control	biological pest control, e.g., use of non-toxic insecticides such as bacteria which attacks mosquito larvae.

In 1982, the Water Supply and Pollution Control Division (of the N.H. Department of Environmental Services (DES)) published a report entitled: Inventory of Groundwater and Surface Water Potential Nonpoint Pollution Sources. The report's scope covered most of Strafford and Rockingham counties. Stratham was cited as having the following potential nonpoint pollution sources:

- Pesticides: Stratham participates in the Seacoast Area Mosquito Control (SAMC) program. After flooding events, SAMC crews spray a biological pesticide ("BTI") on salt marshes and, to a lesser extent, freshwater wetlands throughout Town. The pesticide contains bacteria which attacks mosquito larvae. Biological control of larval mosquitos has much less potential for adverse health impacts than spraying adult mosquitos with a synthetic and more toxic insecticide (e.g., Resmethrin). However, Resmethrin is also used along roads to kill flying adult mosquitos.

- Salted Roads: Stratham contains several roads that are subjected to substantial winter salting (e.g., Routes 101 and 108). Road salting should be minimized within the Town's aquifer areas.

- Agricultural Runoff: Within Town there are many areas of tilled farmland and two dairy farms that are either located adjacent to a perennial stream or to the Squamscott River. Without the use of Best Management Practices (e.g., manure management, etc.), these areas may impact surface water (and groundwater) quality.

- Solid Waste Disposal: The Town Dump is located on the west side of Union Road. This site is presently used for the disposal of brush and demolition debris, and for the collection of scrap metal which is trucked out and recycled. The dump was closed to household waste disposal in 1980, after about 30 years of service. The dump is unlined, but the Town has been gradually capping the site with clay (and then covered with loam and seed). There is no closure plan for the dump, however, a recent Kimball-Chase study has identified four locations around the site to place monitoring wells. The dump was the only waste site identified in Stratham by the State's Waste Site Inventory (source: Waste Management Division of the N.H. Department of Environmental Services, September 1987). The Town's dump is located in the eastern portion of the Bunker Hill aquifer. However, according to the Dubois & King study (Town-wide Water Supply Report, previously cited), the drainage from the dump site is toward the east - away from most of the aquifer's remaining area.

- Salt Shed: A salt storage shed is located at the corner of Frying Pan Lane and Bunker Hill Avenue, next to the Town's Public Works shed. (It is located within the Bunker Hill aquifer.) In 1982, it was estimated that this shed contains 100 tons of salt during the winter.

Other potential nonpoint pollution sources within Stratham, but not identified by the 1982 DES inventory, are described below.

- Pesticide Application: As of July 1989, the N.H. Department of Agriculture has a record of 13 sites throughout Town where pesticides are applied. All pesticides should be applied according to best management practices as prescribed by the Rockingham County Conservation District. In addition, "integrated pest management", using biological pest control, should be considered for these sites.

- Underground Storage Tanks: As of November 1989, the N.H. Department of Environmental Services had identified 20 underground fuel storage tanks, at ten sites throughout Stratham. The capacity of these tanks range from 500 to 10,000 gallons, while the ages range from three to 28 years. Detailed data relative to tank location (by street address), owner's name, tank number, capacity, type of product stored, and the tank's age is presented in Appendix III, "Inventory of Underground Storage Tanks." The underground storage tanks within Stratham are single-walled and have no leak detection systems. All of the tanks are constructed of asphalt-coated steel.

  As of June 1990, the Planning Board has seen a preliminary proposal for a convenience store/gas station to replace an existing service station (see Appendix III, C&E Service Station; coded as #1 on Map G). If the existing underground storage tanks are replaced, the new tanks should be constructed with the most leak resistant materials (e.g., fiberglass) and should be equipped with a leak detection system.

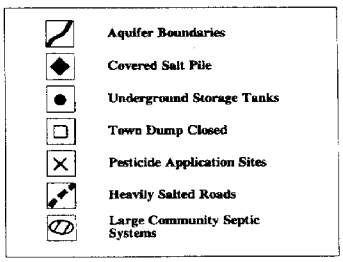
The sites described above are depicted in Map G - "Potential Pollution Sources". Areas of active farmland are depicted in Map 10 of the 1990 Open Space and Recreation Plan.

In addition to these nonpoint source pollutant categories evaluated by the 1982 Inventory, excavation sites are also of concern. Stratham contains a total of four gravel pits within the Bunker Hill aquifer. Substantial excavation poses a potential threat to an aquifer's water quality. By removing the aquifer's cover soils the site's capacity to filter pollutants is reduced. This problem may become acute if development is located in this area, and groundwater quality is threatened by poorly treated septic system effluent. In general, when protective layers of earth material are stripped away, the groundwater is left more vulnerable to contamination (e.g., a site with an exposed water table being contaminated by fecal wastes from animals). Moreover, when earth is excavated too close to the water table, flooding problems can ensue from unusually wet years and high water tables.

The last type of nonpoint source of contamination that is noteworthy is radon. An important reason to map bedrock types relates to the issue of radon in groundwater. Radon contamination has recently become a concern throughout the U.S.. Radon is a colorless, odorless, cancer-causing gas produced as uranium (typically occurring in trace amounts) decays. This gas escapes from water once it is brought up from the ground. For example, when a shower is used in a home with radon-containing water, radioactive gas diffuses into the air. Hydrogeologists at UNH's Department of Earth Sciences report that water from deep, bedrock wells is more likely to carry radon than water from shallow wells or those in gravel deposits.

Several years ago New England was surveyed for its susceptibility to radon using remote sensing techniques. A map was produced from this project entitled: "Generalized Bedrock Geologic Map of New England with Emphasis on Uranium Endowment and Radon Production," (W.J. Olszewski, Jr.; UNH, 1986). Around this time, the USGS drafted a map (unpublished, but available for inspection at the State Geologist Office) showing the uranium concentration in rocks throughout New

Map G
Potential Pollution Sources



Prepared by the Rockingham Planning Commission
June 1990

Sources:
"Geohydrology and Water Quality of Stratified-Drift Aquifers in the Exeter, Lamprey, and Oyster River Basins, Southeastern N.H.", U.S.G.S.; 1990.

"Waste Site Inventory", Waste Management Division, N.H. Department of Environmental Services, November 1986.

"Inventory of Groundwater and Surface Water Potential Non-PointPollution Sources", N.H. Dept. of Environmental Services, February 1982.

"Underground Storage Tank Information", N.H. Dept. of EnvironmentalServices, December 1989.

"Pesticide Application Sites", N.H. Dept. of Agriculture/ Complex Systems Research.

Roads Updated September 1988
by the Rockingham Planning Commission

— • — • — TO BE CONSTRUCTED

Prepared by KA
Southeastern New Hampshire Regional Planning Commission
3 Water Street
Exeter, New Hampshire 03833
January 1976

* The preparation of this map was financially aided through a Federal grant from the Department of Housing and Urban Development, under the Comprehensive Planning Assistance Program authorized by Section 701 of the Housing Act of 1954 as amended

1000 0 1000 2000 3000
SCALE 1 inch = 1000 feet

Hampshire. In April, 1989, the State Geologist devised a "radon susceptibility rating" system for the bedrock types in the region, based on the probability of radon occurrence. This rating system ranged from "Very Low" to "Very High". The bedrock types listed above and shown on Map D have been rated as follows:

OZe = Medium
OZk = Medium
Oe9 = Very Low

2. Future Potential Pollutant Sources

a. Near Term - As of June 1990, the Stratham Planning Board did not approve any plans for residential or nonresidential development that could be considered a future potential pollutant source.

b. Long Term

1) Surface Water - Two significant streams (Parkman and Mill brooks) flow through commercial areas along Route 101 shown in the Stratham Zoning Map and Future Land Use Map. When reviewing future commercial development along these streams, runoff from paved and other impervious areas should be considered as a potential source of nonpoint pollution. Fortunately, Stratham has recognized the need to protect its surface waters. Section 12 of the Zoning Ordinance - the Shoreland Protection (Overlay) District - requires that a setback be maintained between perennial streams and development, with a vegetated buffer.

However, even with shoreland protection, the northwestern parts of Stratham's industrial district pose a significant threat to the Town's only Class A surface water - Dearborn Brook. The peripheral areas of the industrial district contain both Dearborn Brook and the wetlands that drain into the Brook. The consequences of contamination occurring in this area would be serious, considering that Dearborn Brook is a component of Exeter's municipal water supply. For these reasons, Stratham should move the boundaries of its industrial district away from Dearborn Brook. This would be a relatively slight change, on the order of about 500 to 1000 feet.

2) Groundwater - As previously discussed (in Section II), certain aquifer areas are zoned as commercial or are recommended for medium density residential development (see Appendices IV and V). Runoff from commercial sites can be sources of nonpoint pollution to groundwater. In addition, the Town should consider community septic systems from cluster developments, or large commercial systems, as being threats to Stratham's aquifers. It is therefore imperative that the Town collect more information to assess the groundwater potential of its aquifers, and ultimately adopt an aquifer protection ordinance to safeguard the water quality of designated aquifer areas.

B. Contributing Areas Outside of Stratham

1. Surface Water

a. Existing Potential Nonpoint Pollutant Sources

The Town of Stratham is unique in that virtually all of its streams and rivers flow out of Town. The exceptions are the Winnicut River and the Squamscott River. The Winnicut River flows into eastern Stratham from North Hampton. The North Hampton portion of the River is surrounded by undeveloped woodlands, fields, wetlands, and some low-density housing (1 to 3 acres per dwelling). No potential threats to the Winnicut River have been identified in North Hampton.

The Squamscott River is fed by surface waters from the towns of Exeter and Newfields (in addition to Stratham). As with the Winnicut River in North Hampton, the Squamscott River corridor (within 1000 feet of the River) contained by Newfields and Exeter consists of woodlands, fields, wetlands and some low-density housing. Even though no nonpoint potential threats to the Squamscott River have been identified in Exeter or Newfields, both towns have municipal sewage treatment plants. However, these plants are considered to be point pollution sources and are discussed further herein.

b. Future Potential Nonpoint Pollutant Sources

Without a shoreland protection ordinance, North Hampton's portion of the Winnicut River is vulnerable to contamination from any development that encroaches on the River. Hopefully, North Hampton will heed the recommendation of its Master Plan which promotes the adoption of a shoreland protection ordinance. The Squamscott River, on the other hand, is protected in both Exeter and Newfields by shoreland protection ordinances.

2. Groundwater

Stratham's primary aquifer areas lie almost entirely within the Town's borders. Two small areas that overlap into the towns of Greenland and Exeter are depicted in Map G. The Stratham Hill aquifer overlaps into a residentially-zoned area of Greenland. And Exeter's portion of the Skinner Springs aquifer is protected by the aquifer protection ordinance as amended at the 1990 Exeter Town Meeting. Hence no potential threats from surrounding towns to Stratham's aquifers have been identified.

Point Pollution Sources

A. Within Stratham

Information provided by the Water Supply and Pollution Control Division in May 1989 indicates that there are no permits issued in Stratham under the National Pollutant Discharge Elimination System (NPDES) for surface water discharges.

Information provided by the Groundwater Division in May 1989 indicates that three permits have been issued in Stratham for groundwater discharges,

under the N.H. Code of Administrative Rules (Ws 410). All three permits have been issued for the community septic systems (leach fields) of residential cluster developments, as depicted in Map G. Table 4 - "Groundwater Discharge Permit Holders" - provides further details regarding the conditions of these permits.

Table 4
Groundwater Discharge Permit Holders

Map G Code #	Development Name	Location	Effluent Type	Effluent Design Volume (gpd)
A	Turnberry Condominiums	Squamscott Road	Domestic Wastewater	30,000
B	Stratham Green Condominiums	NH Route 108	Domestic Wastewater	18,000
C	Montrose Condominiums	Hersey Lane	Domestic Wastewater	18,900

Only the leach fields from the Montrose Condominiums lie within or near Stratham's primary aquifer areas.

B. Contributing Areas Outside of Stratham

Great Bay is periodically restricted or prohibited from the taking of shellfish due to bacterial counts in excess of the 70 coliform bacteria per 100 milliliters standard for such waters. The pollution problems of Great Bay, and the Squamscott River, stem primarily from the municipal sewage treatment plants operated by the towns of Newmarket, Newfields, and Exeter. These treatment plants are depicted in Map H - "Principal Point Pollution Sources to the Squamscott River and Great Bay." The following is a brief review of the plants' operating conditions and possible improvements as described in the Interagency Report on the Shellfish Waters of New Hampshire (by the Water Supply and Pollution Control Division, N.H. DES; February 1989).

1. Newmarket

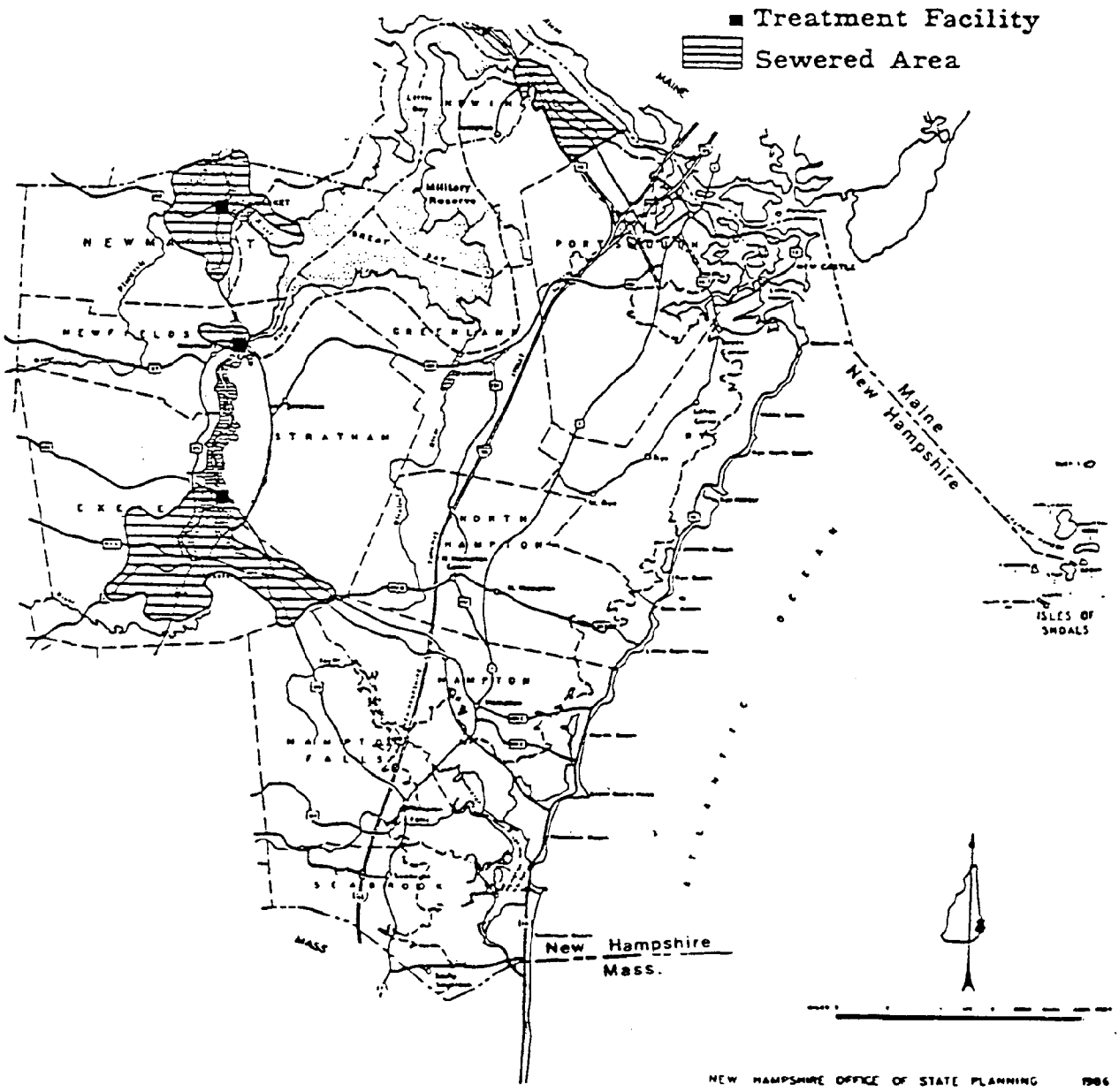
This facility lacks adequate sludge dewatering equipment. This may affect effluent quality in the near future and impact on the plant's capability to properly disinfect due to solids carryover. It is recommended that adequate solids handling, dewatering, and disposal equipment be installed. Further, dechlorination should be considered.

2. Newfields

This facility is underloaded and has good treatment; however, the automatic tide clock designed to control discharge on the outgoing tide has never worked properly. With four NPDES coliform violations during a 15-month period in 1988-89, there is a need to assess the contact tank baffle configuration to assure effective kill over varying conditions.

PRINCIPAL POINT POLLUTION SOURCES TO THE SQUAMSCOTT RIVER AND GREAT BAY

Map H



3. Exeter

Although improvements have been made to this system, it has been inadequate for waste water loadings and has been occassionally out of permit compliance. A major upgrading (i.e., expansion of lagoon capacity, chlorination contact chambers, etc.) has recently been completed and should result in an adequate facility.

In addition, the towns of Newmarket, Newfields, and Exeter have a problem that is common throughout New England: combined sewers. Hence, during heavy rainfalls, the sewers become overloaded with street runoff. When the total volume of wastes becomes larger than the treatment plant can handle, some of the wastes are allowed to overflow and go untreated into the Squamscott River and/or Great Bay. To reduce this undue sewage loading, these communities should work toward separating their combined sewers (the Town of Exeter has recently received an EPA grant for this purpose).

If the recommendations above are carried out, public health will be protected and shellfish resources will be restored for Stratham and surrounding communities.

IV. GROWTH IN DEMAND FOR WATER

Projected Growth in Demand for Water

In June 1987, the Water Management Bureau, of the N.H. Department of Environmental Services' Water Resource Division, initiated the Water User Registration and Reporting Program. The objective of the program is to gather accurate data on the major uses of the State's water and the demands placed upon aquifers, streams, and rivers. To accomplish this objective, all facilities that use an average of 20,000 gallons (or more) of water per day must register with the Division. According to the Bureau's latest list (October 1988), the Town of Stratham has no users of 20,000 gallons of water per day.

Stratham's most current and thorough water supply study was performed by Dubois & King in January 1989 (previously cited). The study evaluated the Town's present and future demand for water. According to the study, the Town will have an abundant water supply available from individual private wells for the next 5 to 20 years.

The Dubois & King study projects Stratham's population to be 6,707 by the year 2000. The following excerpt taken from this study briefly explains the Town's future demand for water.

"It is very probable that by the turn of century the additional 95% people from 1985 (6707/3440) will result in a more congested Town and much more intense commercial activity along Route 101. Experience in other growing areas confirms that this trend may eventually impact some of the wells in the more densely populated areas making a public water system more desirable.

It is useful to look at the ultimate water needs of the Town to serve the growing population. The numbers in Table [5] show that an average daily production of [1,165,800 gpd] would be needed to serve the entire 2010 population (150 gpcd) and adequate storage would be needed to meet the peak hourly production need of 1327 gpm. These estimates

include allowances for light commercial/industrial needs, leakage and seasonal flushing.

Of course, no water system in the region is required to serve a Town's entire population. There will always be those outlying residents whose wells are safe and adequate and who do not require service. More important especially in the short term, there will be sparsely developed areas in Town where water system extensions are not economically feasible"

Table 5 - "Projected Water Demand" - compares the Town's projected water needs using the population projections from both Dubois & King and the N.H. Office of State Planning (1987).

Table 5
Projected Water Demand

	Population		Average Daily Production Need (gpd)*	
Year	A	B	A	B
1990	5348	4122	802,200	618,300
1995	6097	5133	914,550	769,950
2000	6707	5992	1,006,050	898,800
2005	7284	6827	1,092,600	1,024,050
2010	7772	7522	1,165,800	1,128,300

A = Dubois & King study (1989)
B = N.H. OSP (1987)
* ADPN = 150 gallons per capita per day

The lack of detailed data on water usage makes it extremely difficult to break down the water demand by each sector, i.e., residential, commercial, industrial, and agricultural, within Stratham. The water demand for the non-residential sectors will be entirely dependent upon the types of commercial, industrial, or agricultural uses that locate within Stratham and whether or not they will be water-intensive uses. At this point, all of the Town's industrial uses, located at the Stratham Industrial Park, are connected to the Exeter water system. It is assumed that the residential water demand will account for the majority of Stratham's water usage during the next 10 to 20 years. During this time, the Town's water demands will primarily be met through the use of private wells.

An important concept presented in the Dubois & King study is the potential of using private community water systems, which currently exist, to contribute to a municipal water supply sometime in the future. The study stated that most community water systems (of cluster developments) have deficiencies that make them undesirable as part of a municipal system. These deficiencies include: reduced well protection radius (200 feet instead of 400 feet), distribution pipe sizes that are too narrow, and lack of fire protection capability. However, "the wells for Glengarry, Salt River, Balmoral, and Pear Tree have some potential for contributing to a municipal supply because they are all well protected with up to 400 feet potentially available around the wells" (source: Town-wide Water Supply Report, previously cited). But connecting these systems to a centralized one might be expensive given that they have relatively small yields and are all a good distance from the denser commercial area and Town Center along Route 101.

This section regarding Stratham's future water demand and supply, would not be complete without mentioning the water supply study performed by the U.S. Army Corps of Engineers, New England Division, in December 1988. The study, entitled New Hampshire Route 108 Water Supply Study, was requested by the N.H. DES to provide them with a basis for evaluating the concept of providing a regional water supply along Route 108. The communities included in the study area were Exeter, Stratham, Newfields, Newmarket, Durham, Madbury, Dover, and Somersworth. The water supply alternative described in this report is a pipeline along Route 108 with the Lamprey River as the water supply source. However, considering the expense of storage, treatment, and distribution for this water supply alternative, Stratham should exhaust its options for developing a local groundwater source before investing in this or any other regional water supply project.

V. INFRASTRUCTURE

A. Septic System Usage

Using 1988 OSP population estimates, approximately 4,453 residents are served by septic systems. Stratham has no municipal sewer system and is not planning on developing one in the near future. However, the Stratham Industrial Park and Stoneybrook Lane are connected to Exeter's municipal sewer system. According to the N.H. Housing Finance Authority, approximately 345 acres are sewered in Stratham (as of October 1988).

Occassional septic system failures have occurred throughout Stratham. In 1989 there were four or five failures, whereas during an average year one or two failures are reported.

Stratham has a high potential for growth in its number of septic systems. Given the expense of wastewater treatment facility construction, and the diffuse development pattern in much of Town, it is probable that all future development (during the next 10 years) will be served by septic systems. However, Stratham's Subdivision Regulations prohibit septic system construction in areas where the seasonal high water table is within 24 inches of the ground surface. In addition, Stratham's Zoning Ordinance prohibits septic system construction within 75 feet of a poorly drained soil, 100 feet of a very poorly drained soil or perennial stream, or 150 feet from Great Bay, Squamscott River, or tidal wetlands. These rules will limit the placement of septic systems to areas of Town with relatively good soil conditions.

B. Soil Potential Ratings

Using national standards, virtually all of Stratham's soil types have received a "severe" rating for septic system development. In fact, there are only a few soils throughout Rockingham County that are not classified as having "severe" limitations for septic system development. In light of this, the Rockingham County Conservation District and the USDA Soil Conservation Service developed a more meaningful set of land use guidelines based on soil types.

In May 1987, the "Soil Potentials for Development - Rockingham County" manual was published by the RCCD. Five soil potential classes were provided: very high, high, medium, low and very low. Low and very low potentials are assigned to those soils having severe soil limitations, with costs of design measures extremely high or prohibitive.

Map I - "Soils Suitability for Septic Systems" - depicts the general areas of Stratham that have different soil potentials for septic system development. Soils with low and very low potential were mapped because they had limitations due to steep slopes or high water tables (as well as high shrink-swell properties, short depths to bedrock, and stoniness).

C. Solid Waste Disposal

The Town of Stratham is a member of the Lamprey Regional Solid Waste Cooperative, which was formed in 1978 under RSA 53-A. The Town operates a dump, located on Union Road (depicted in Map G), which was "grandfathered" prior to the 1981 permitting process of RSA 149-M. The dump is used to dispose of brush and demolition debris, and for the collection of scrap metals to be recycled. Household wastes are picked up by private haulers (contracted by the Town) and trucked to the Town of Durham for incineration. In terms of household hazardous wastes (e.g., batteries, lead paint, pesticides, solvents), Stratham residents can dispose of these at the annual Household Hazardous Waste Collections organized by the Rockingham Planning Commission.

This facility has no existing permit violations. As discussed earlier, there is no closure plan for the dump; however, a recent Kimball-Chase study has identified four locations around the site to place monitoring wells. Additionally, the Town has been gradually capping the site with clay and, as part of a future closure plan, the Town may consider placing an impervious lining under the dump to collect its leachate.

D. Public Water Supply

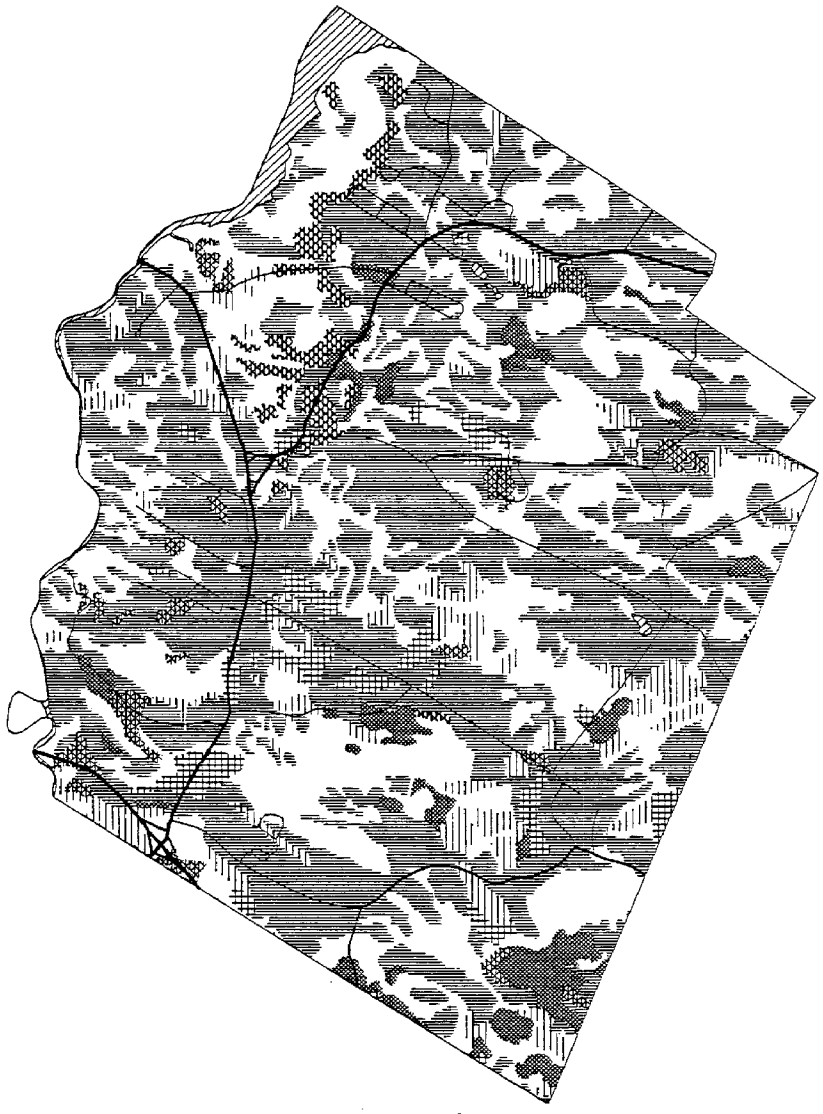
Map F shows the location of 43 public water systems, all of which draw from groundwater. Of these systems, 13 are defined by the N.H. Water Supply Engineering Bureau as "community" systems. The remaining 30 wells are "non-community" systems.

The information contained in the Dubois & Kings study (previously cited) indicates that the existing public water systems will be able to meet their water demands for the next 5 to 20 years. Nevertheless, the study recommends that the Town meet with town officials from Exeter to determine the feasibility of obtaining a short-term water supply, as well as an emergency connection at Route 51.

E. Public Waste Water Treatment

As with Exeter's municipal water, Stoneybrook Lane and Stratham Industrial Park are the only areas in Stratham that are serviced by the Exeter municipal sewer system. Otherwise, there are no public waste water treatment facilities in Stratham. In the future, Town officials should consider discussing, with Exeter officials, the possibility of extending Exeter's sewer lines to Stratham's commercial area and Town Center along Route 101.

Town of Stratham
Soil Suitability for Septic Systems



Water

Very Low Suitability

Low Suitability

Medium Suitability

High Suitability

Very High Suitability

Not Rated/ Too Variable

Map I

Scale in Miles

0 2/3 1 1/3 2

Sources: "Soils Potential for Development-Rockingham County"; U.S.D.A. - Soil Conservation Service and Rockingham County Conservation Dist.; May 1987.

Complex Systems Research Center, UNH; February 1990. Soils delineation based on field work, conducted by the USDA Soil Conservation Service, completed in 1985. Preliminary Data - Subject to Change.

Prepared by the Rockingham Planning Commission, May 1990. SRG

Overall, since much of the development in Town is spread over a wide area, it would be economically unfeasible and undesirable to develop a municipal sewer system that covers a large portion of Town. Hence, it is important that natural resource information, especially soils type, be utilized in order to assure the continued safe and sanitary on-site disposal of the community's sewage.

VI. EXISTING PROGRAMS AND POLICIES

Each ordinance and regulation in Stratham was reviewed for the purpose of identifying the elements of each that have the potential to impact on any of the following eight water resource parameters (WRP):

1) Erosion and sedimentation;
2) Surface water flows;
3) Groundwater recharge;
4) Management of existing and potential contaminant sources;
5) Flood storage;
6) Encroachment on wetlands;
7) Nutrient levels; and
8) Wildlife and fisheries habitat.

Zoning Ordinance

a) Sanitary Protection

Section 5.2.3: Requires that sewage disposal facilities be designed according to State (and Town) standards. In addition, no septic system can be located within 75 feet of a well, 100 feet of a water body, 30 feet of a road ditch line, or on a slope exceeding 15 percent (WRP #4 and 7).

b) Cluster Development

Section 8: Encourages development that requires less consumption of rural and/or agricultural land and requires that sensitive areas (e.g., areas subject to flooding, and/or with high water tables) be avoided (WRP #4, 5, 6, 8).

c) Excavation

Article 10: Requires site reclamation to prevent erosion, and prohibits excavation that would substantially damage a known aquifer (WRP #1, 3 and 4).

d) Wetlands Protection

Article 11: Restricts the use of and encroachment on local wetlands that have been identified as poorly or very poorly drained soils using the standards of High Intensity Soil mapping for New Hampshire. This ordinance is based on a model ordinance developed by the Soil Conservation Service. The intention of the ordinance is to accomplish the following selected purposes that relate specifically to water resources:

- To prevent the destruction of natural wetlands which provide flood protection, recharge the ground water supply, and augment stream flow during dry periods (WRP #1, 2, 3, 5, and 6);

- To control the development of structures and land uses on naturally occurring wetlands which would contribute to pollution of surface and ground water by sewage (WRP #1, 4, 6, and 7); and

- To preserve wetlands for other ecological reasons such as those cited in RSA 483-A (WRP #1, 2, 3, 5, 6, 7, and 8).

The Stratham wetlands ordinance has the potential to impact each of the eight water resource parameters.

e) Shoreland Protection

Article 12: Restricts the use of and encroachment on local shorelands of perennial rivers or streams, or tidal wetlands. Selected objectives contained in this ordinance that relate specifically to water resources are as follows:

- To promote the preservation and maintenance of surface water quality (WRP #1, 2, 4, 5, and 7); and

- To conserve and protect aquatic and terrestial habitat associated with intertidal and riparian areas (WRP #8).

f) Special Exceptions

Section 15.8.2(5): Requires that there be no excessive demand on municipal services, including water and sewer (WRP #4). This is one of the six standards that must be met in order for the ZBA to grant a special exception.

g) Floodplain Management

Section 16: Prohibits encroachment, from fill or new construction, that results in any increase in the 100-year flood levels (WRP #5); provides construction standards for buildings and septic systems within the 100-year floodplain (WRP #4).

Subdivision Regulations

a) Procedures for Subdivision Approval

Section 2.3.2(d) and (e): Requires high intensity soils information and data on test pits and percolation tests (WRP #4 and 7).

b) Data Required for Subdivision

- Section 3.3.2(h)1: Requires an explanation of any drainage easements (WRP #2).

- Section 3.3.3: Requires that subdivision plans depict the locations of existing and proposed curbs, gutters, drainage easements, manholes, catch basins, sewers, stormwater drains, fire hydrants, and water

lines. Other existing features include septic systems, drains, wells, water bodies, and wetlands (WRP #2 and 4).

- Section 3.3.4: Requires calculations specifying the quantity of stormwater run-off, with adequate drainage facilities (WRP #1 and 2).

c) General Principles and Standards for Subdivisions

- Section 4.2.2: States that land subject to flooding or poor drainage shall not ordinarily be subdivided (WRP #2 and 5).

- Section 4.2.4: Requires that wetlands and watercourses be preserved as much as possible (WRP #1-8).

- Section 4.3: Requires that lot sizes meet the area standards based on soil types, for adequate on-site sewage treatment (WRP #3, 4, 6, and 7).

- Section 4.4.6: Allows the Planning Board to require drainage studies and corresponding drainage facilities to accommodate surface run-off (WRP #1 and 2).

- Section 4.4.11: Provides local standards for septic system construction; and a hydrogeologic study may be required for any development with significant sewage loading within the Bunker Hill aquifer (WRP #4 and 7).

- Section 4.4.13: Requires that subdivisions involving flood hazard areas be reasonably safe from flooding (WRP #4 and 5).

- Section 4.4.14: States that an erosion and/or sedimentation control plan, and/or temporary vegetation or mulching may be required by the Planning Board (WRP #1 and 4).

- Section 4.4.15(b): States that the Planning Board may require a drainage easement of at least 25 feet (WRP #2).

- Section 4.5.2: Establishes design standards for storm water drainage, and detention, systems (WRP #2 and 5).

Site Plan Review Regulations

a) Application Procedures and Requirements

- Section 4.2.2(d) and (e): Requires high intensity soils information and data on test pits and percolation tests (WRP #4 and 7).

- Section 4.3.1(d), (e), (h), and (1): Requires that site plans depict the locations of watercourses and water bodies, drainage systems, and the 100-year floodplain (WRP #2 and 5).

- Section 4.3.2(e) and (k): Requires that site plans depict the proposed locations of all water lines, sewage facilities, drainage structures, and erosion and sedimentation control methods (WRP #1, 2 and 4).

- Section 4.3.2(f) and (1): States that the Planning Board may require a storm drainage plan, with stormwater run-off calculations, and may require information on the type and quantity of waste water generated.

b) Design and Construction Requirements

- Section 5.3: Requires that an adequate surface storm water drainage system be provided, and specifies design standards (WRP #2 and 5).

- Section 5.4: Requires that development involving flood hazard areas be reasonably safe from flooding (WRP #4 and 5).

- Section 5.12: States that an erosion and sedimentation control plan, with specific provisions, may be required by the Planning Board (WRP #1 and 4).

Building Ordinance

Stratham's Building Ordinance contains no provisions that specifically have the potential to impact water quality or quantity.

Health Ordinance

The Town of Stratham does not have a health ordinance per se. However, there are many ordinances and regulations which pertain to public health, e.g., standards for septic system design. In addition, the Town has an appointed Health Officer, a Building Inspector, and a Septic System Inspector, all of whom assist in the administration of these local health-related laws, as well as State regulations in accordance with RSA 147.

VII. ANALYSIS

Analysis Regarding Water Supplies

Virtually all of Stratham is served by individual private wells. It is assumed that the vast majority of Town will continue to be supplied by private wells for at least the next 10 to 20 years.

However, as previously described (in Section IV), the trend of intense commercialization along Route 101 may make a public water system desirable. The likely area to be served by a municipal system would be the denser commercial area and Town Center along Route 101.

The Town of Stratham appears to have at least three potential sources for a future municipal water system. These options (described more fully in Section IV) are listed below:

1) Drill wells into the Town's primary stratified drift aquifers (e.g., Stratham Hill, Bunker Hill, or Skinner Springs) or into high-yielding bedrock fractures.

2) Through an inter-municipal agreement, have Exeter extend its water lines along Route 101.

3) Pursue the concept of a regional water supply using the Lamprey River. (This option seems the least likely of the three.)

Analysis Regarding Other Water Resource Purposes

a) **Discharges:** There are no significant sources that discharge wastes into the Town's surface water. Therefore, there is presently no need to determine the "assimilative capacity" of Stratham's surface water resources. However, as cited in Map G, the Town contains three large community septic systems that are classified as point source discharges to the Town's groundwater. One of the greatest long-term concerns of the systems is the plume of nitrate-laden effluent that flows from them into the groundwater. For these systems, as well as proposed systems, the "assimilative capacity" of the groundwater should be determined. The assimilative capacity is basically the capability of the subsurface strata within the parcel boundaries to dilute the effluent to acceptable contaminant concentrations (e.g., 5 to 10 mg/l nitrate nitrogen).

b) **Recreation:** Relative to other towns within Rockingham County, Stratham has many streams and rivers. The Town also contains an extensive shoreline along the Squamscott River and some along the Great Bay. Water-related recreational activities include shell and fin fishing, boating, swimming, and skating.

In 1977, the N.H. Office of State Planning published a study entitled: "Wild, Scenic, and Recreational Rivers for New Hampshire." Out of 67 other rivers being classified throughout the State, the study classified the Winnicut River as a "Recreational River" (and the Squamscott River as a "Scenic River"). The study defined recreational rivers as those: which provide outstanding recreational opportunities in natural surroundings. These rivers should be protected for their natural qualities which can provide for a wide range of active and passive outdoor recreation activities. Recreational rivers should: be readily accessible,; have high water quality; have enough water to provide for fishing and canoeing; and be at least five miles long.

The Squamscott River and Great Bay are the most suitable waters for boating. Canoeing is particularly popular along the Squamscott River. Stratham has two public access areas: Chapman's landing along Route 108 (owned by the N.H. Fish and Game Department), and the Town Landing at the end of River Road. Since the Town-owned landing has such a limited area (2 acres), the Town should investigate acquiring additional land or conservation easements around this site.

At present, there are no waters within Stratham that have sufficient volume, quality, and/or access to be suitable for public swimming. All water-related recreation requires high water quality for an ideal experience. Poor quality affects the safe enjoyment of water recreation and impairs its aesthetic appeal. Stratham must safeguard its surface water quality, particularly that of the Squamscott River and Great Bay, in order to provide the opportunity of sports fishing, boating, and swimming for present and future townspeople.

c) **Wetlands:** Wetland types found in Stratham include shrub swamps, shallow and deep marshes, meadows, and forested swamps. Lands with soil having a high seasonal water table, and classified as poorly or very poorly drained

soils by the USDA Soil Conservation Service, are also considered to be wetlands. Wetlands are important, valuable, natural resources and worthy of protection from inappropriate use. They have been found, in general, to provide critical ecological and socially valuable functions, including:

1) provide habitat and reproduction areas for plants, fish and wildlife;
2) help maintain ground and surface water levels;
3) act as flood water storage areas;
4) absorption and filtration of pollutants and sediments (caused by upstream erosion);
5) provide opportunities for recreation and education;
6) contribute to scenic values.

Many of the wetland areas in Stratham are adjacent to rivers and streams. Significant areas of wetlands are located in the following parts of Town: east of Stratham Heights Road; along Parkman Brook; between High Street and Long Hill; along the Squamscott River and Great Bay; and just south of Stratham Hill. The latter area contains an important White Cedar Swamp. Located adjacent to the new elementary school, this wetland can provide many educational opportunities for Stratham students.

The salt marsh along both sides of the mouth of the Squamscott River represents approximately one half of all the marsh in the Great Bay estuarine system - over 400 acres (source: Great Bay National Estuarine Research Reserve Management Plan - Draft; N.H. Office of State Planning, Concord, NH; January 1989). This complex of extensive salt marsh and adjacent farmland is prime habitat for migratory waterfowl. In addition, four rare and endangered plants have been identified in this area by the N.H. Natural Heritage Inventory (see 1990 Open Space and Recreation Plan, Section IV.D, for further discussion).

The filling of and use of wetlands for building construction not only destroys wetlands and their benefits, but may lead to groundwater contamination as well. Leaching fields constructed in filled areas are likely to be placed too near the seasonal high water table below and to have an inadequate receiving layer for proper treatment of the septic system's effluent.

There is an ongoing need to protect wetlands in Stratham. Statewide, wetlands are under increasing development pressure due to the depletion of the most developable land. Although the U.S. Army Corps of Engineers and the State of New Hampshire have laws and regulations governing wetlands, they do not always provide the degree of protection needed. Existing regulations look at each dredge and fill request as a separate application, resulting in a piecemeal approach. In addition, the inadequate number of federal and State inspectors means that some wetlands are not sufficiently protected. A local wetlands ordinance enables the community to protect wetlands in a Town-wide context. Unlike State and federal rules, local regulations can give the Town control over the location of structures and septic systems in relation to wetlands.

For these reasons, local control over the use of wetlands should remain in effect indefinitely. The Town of Stratham has recognized the importance of preserving wetlands, and has acted accordingly by establishing a Wetlands Conservation District ordinance.

d) **Fisheries:** The Winnicut River, Squamscott River, and Great Bay are the most commonly fished water bodies in Stratham. These rivers, as well as Jewett Hill Brook, and the Bay are currently being stocked with anadromous fish by the N.H. Fish and Game Department as part of a Statewide restoration program. This program involves stocking the rivers with game fish such as rainbow trout, river herring, American shad, steelhead, brown trout, salmon, and eastern brook trout.

Stratham must safeguard its surface water quality in order to provide the opportunity of commercial and recreational fishing for both present and future townspeople.

e) **Wildlife Habitat:** River, stream, and wetland corridors provide the richest habitat for the greatest number of fish, wildlife, and flora. Fish and wildlife populations cannot succeed within a limited range, and waterfowl and other birds need ground-level nesting habitat. Protection of these linear corridors is essential to the stability of wildlife populations.

Riparian corridors (i.e., shorelands) also contribute much in terms of recreational benefits, i.e., canoeing, hiking, fishing, birding, horse trails, cross country skiing, picnicking, etc. Shorelands are also sensitive due to flooding, erodibility, and proximity to open water. Moreover, soil type and percent slope typically limits the development potential of a shoreland area.

The Great Bay Estuary provides prime habitat for many wildlife species. According to a N.H. Fish and Game study, more than 90,000 birds reside in the estuary (source: Inventory of the Natural Resources of Great Bay Estuarine System; N.H. Fish and Game Department; December 1981). Thousands of Canada geese and black ducks rest and feed in the fall. Osprey are common in the spring and fall migration. Three rare and endangered animal species that live within in the estuary include the bald eagle, common tern, and the common loon.

In addition to excellent coastal habitat, Stratham also has important inland habitat areas. Examples include: wetlands; river and stream corridors; forests such as coniferous, hardwood, and mixed woodlands; and open lands comprised of meadows and fields. These habitat types support a wide range of animals including game species such as deer, coyotes, raccoons, rabbits, and pheasant. Stratham's prime wildlife habitat areas include the Squamscott River corridor and an extensive tract surrounding the Winnicut River.

f) **Hydropower:** There are no hydropower dams in Stratham, nor are there plans for any in the future. The hydropower market is not as strong as it was ten years ago (during the height of the nation's energy shortage) because of uncertain markets for electricity, environmental restrictions, and alternative power sources which are more economical.

Harnessing hydropower is not always benign to the fish, animals, and people that use the impacted river. Hydro development can result in the loss of productive habitat, degrade water quality, and cause direct mortality of fish (especially juvenile fish traveling downstream) and other aquatic organisms.

If any hydropower facilities are proposed in the future, no decision should be made by Town officials until a thorough site review and evaluation is performed. The cumulative impacts of hydropower dams along the river should also be considered.

g) **Fire Protection:** Stratham's Subdivision and Site Plan Review Regulations enable the Planning Board to require fire safety facilities, such as fire ponds and dry hydrants. Historically, the Board has required at least one fire pond and dry hydrant within or adjacent to a large development. Considering the regular occurrence of wetlands throughout Town, development engineers have had no problem locating areas suitable for fire ponds.

h) **Conflicting Uses:** The principal conflict that exists between competing uses involves Great Bay, which receives waste water flows from the municipal sewage treatment plants of surrounding towns (i.e., Exeter, Newfields, and Newmarket), and where recreational and commercial fishing takes place. This conflict could be mitigated by upgrading these treatment plants, and separating their combined storm sewers, and discouraging significant increases of sewage loading to the Bay.

Management of Potential Threats

Section III, "Potential Threats to Water Resources", presents a full discussion of existing and permitted future land uses that pose threats to water resources within Stratham. A brief discussion of Stratham's primary potential threats to identified water resources, including mitigation measures, is presented below.

1) **Large community septic systems:** An advantage of cluster development is that facilities and utilities can be concentrated and centralized. However, this creates the potential for large community septic systems. These systems can generate large volumes of effluent in a relatively small area. Because of concerns regarding long-term maintenance, hydraulic mounding (i.e., induced water table rise), and groundwater contamination, the Town should discourage very large community systems (i.e., greater than 10,000 gpd). Rather, smaller systems should be separated by a specific distance that is proportional to the systems' design volume.

   As presented in Table 4, three condominium developments currently use large community septic systems. Their monitoring wells, as required by the N.H. DES, should be regularly and carefully checked. In this way, the homeowners associations and the Town will have ample opportunity to respond if a system malfunctions.

2) **Town Dump:** This facility is located within the Bunker Hill aquifer. As mentioned earlier (in Section III), it has been presumed that the drainage from the dump is toward the east - away from most of the aquifer's remaining area. Nevertheless, the Town may consider placing an impervious lining under the dump to collect its leachate. Capping the dump with clay, which continues to be performed by the Town, will significantly reduce the leachate generated at this site.

3) **Road Salting:** Stratham contains two major highways (e.g., N.H. Routes 101 and 108) that are heavily salted during winter months. Certain segments are located over parts of Stratham's primary aquifers (see Map G). Road salting should be minimized throughout Town, but especially along roads

that overlay aquifer areas. Road salt reduction methods are specified in the following section under "Nonregulatory Programs", #8.

4) **Salt storage:** The Towns salt storage shed is located within the Bunker Hill aquifer. Even though this facility is covered, Town officials should closely monitor potential leaching effects on the aquifer. If necessary, this site should be relocated.

5) **Agricultural runoff:** Areas of tilled farmland can be found throughout Town. Also, two major dairy farms are located west of Routes 101 and 108. Farmers should employ Best Management Practices (promoted by the Soil Conservation Service) for manure, herbicides, pesticides, and fertilizers in order to minimize agricultural runoff that could be harmful to surface and groundwater resources.

6) **Pesticide application:** Thirteen sites throughout Town have been, and continue to be, sprayed with pesticides. In addition to using Best Management Practices, "integrated pest management" using biological pest control should be considered for these sites.

7) **Underground storage tanks:** Twenty active or abandoned underground petroleum storage tanks have been identified and described in Appendix IV. While all of these should be considered potential risks to water resources, one of these tanks, located at site 5 (see Map G), should be of particular concern because it lies within the Stratham Hill aquifer. Further measures to manage underground storage tanks are described in section VIII.

As a final note, most existing and future non-residential land uses, particularly those which use and discharge water, should be regarded as potential threats to surface and groundwater resources. Sites with failing septic systems should also be considered potential threats to water resources.

Additional management and protection techniques for water resources are described in the following section.

VIII. RECOMMENDATIONS FOR NEW OR REVISED POLICIES AND PROGRAMS

Nonregulatory Programs

It is recommended that the Town of Stratham employ the following nonregulatory programs in order to manage and protect its water resources:

1. Through hydrogeologic studies and pumping tests the Town should determine the viability of its identified aquifers (depicted in Map F) as future sources for a municipal water supply.

2. The Town should consider redefining the Industrial District, by moving its western boundaries east, in order to protect Dearborn Brook. The western-most part of the Industrial District also contains an aquifer area (as depicted in Appendix IV).

3. The Town should meet with Exeter officials to discuss the possibility of obtaining a short-term water supply, as discussed in the 1989 Dubois & King study (previously cited). Stratham officials should also determine

the feasibility of Exeter extending its water lines into Stratham along Route 101.

4. Educational and informational programs should be developed in order to provide the general public with an understanding of the operation, proper use, and maintenance of septic systems and leach fields (i.e., regularly pumping out septic tanks, avoiding disposal of hazardous or harmful wastes, etc.) This would likely prevent unnecessary system contamination and failures, thereby protecting surface and groundwater resources.

5. Develop a septic system inspection program, especially for primary aquifer recharge areas, in order to ensure that these systems are adequately maintained.

6. Continue to promote and participate in the annual Household Hazardous Waste Collection, sponsored by the Rockingham Planning Commission. For past collections, Stratham's share of the costs was funded directly by the Town.

7. Continue to appropriate money for land acquisition to be used for the protection of land and water resource conservation areas. There are generally five different methods for protecting these natural areas:

   a) Land Purchase;
   b) Option of Right of First Refusal;
   c) Purchase and Resale;
   d) Bargain Purchase;
   e) Easements - Conservation Restrictions and/or Purchase of Development Rights.

   Conservation funds enable the Town to act on short notice when a valuable parcel of land is threatened. This land may be of critical importance for protecting significant wetlands, shoreland, wildlife habitat, or recreational areas.

8. The Conservation Commission should also seek land acquisition funding through State and Federal grants (e.g. Trust for New Hampshire Lands, the Land and Water Conservation Fund, and the Pitman-Robertson Fund through the N.H. Fish and Game Department).

9. The Conservation Commission should work with people who own land having conservation potential by promoting the tax incentives associated with the donation of land or easement restrictions. The Current Use Assessment Program also provides tax abatements on parcels of 10 acres or more or on "natural preserves" of any size.

10. The Stratham Planning Board should work with their counterparts in surrounding towns to promote land use planning practices that are mutually beneficial to protect the Squamscott River and Great Bay and common watersheds, wetlands, and aquifers. Stratham may choose to develop inter-municipal agreements (pursuant to RSA 53-A) to protect these shared resources. During the 1989 session, the N.H. Legislature approved Senate Bill 161 which authorizes agreements between municipalities to develop water resources management plans.

11. Continue and enhance the Town's program to reduce the amount of road salt used, especially in aquifer recharge areas. The following methods should be employed:

    a) Emphasize mechanical snow removal;
    b) Mix sodium chloride with calcium chloride and/or sand to reduce the total amount of sodium chloride applied;
    c) Periodically re-calibrate salt spreaders so that they apply the correct amount of salt/sand mix; and
    d) Post areas where reduced salting is practiced, which will encourage drivers to reduce speeds and drive more cautiously.

    This program should be adopted for both Town and State-owned roads. In the meantime, the N.H. Department of Transportation should be notified of the Town's desire to reduce road salting within its primary aquifer areas.

12. Develop a program to inspect and maintain drainage control facilities, (e.g. catch basins and detention ponds, and culverts) throughout Town. If these devices become filled with sediment, they can no longer perform their function.

13. Develop a program emphasizing water conservation. Using less water may increase the efficiency and useful life of individual sewage disposal systems throughout Town.

14. Encourage farms and pesticide users to employ Best Management Practices (BMP's) as prescribed by the Soil Conservation Service. BMP's include storage of manure in concrete pits, and more efficient and better timed application of fertilizer and pesticides.

15. Develop a water quality data base for monitoring contamination events in both surface and ground waters throughout Town.

16. The Planning Board should be kept informed by the Rockingham Planning Commission regarding the availability and appropriateness of regional or State water resource data.

17. The Great Bay estuarine system has been designated as the Great Bay National Estuarine Research Reserve by the National Oceanic and Atmospheric Administration (NOAA). The Great Bay reserve is one of 17 throughout the country. The research reserve system is a non-regulatory federal program that emphasizes research, education, and land protection. The Office of State Planning has provided the initiative in establishing the program in New Hampshire, although once under full implementation, the State Fish and Game Department will assume program responsibility.

    Another organization committed to conserving the land and water resources of Great Bay is the Great Bay Estuarine System Conservation Trust (GBESCT). The GBESCT is a private, non-profit citizen's group whose membership is drawn largely from the Seacoast area. Although originally organized as a local land trust, the GBESCT also has worked to protect water quality, as well as air quality and critical marine habitat.

    In order to promote the protection of the Great Bay Estuary, the Town should work with the abutting landowners, the Office of State Planning, the GBESCT,

the Water Supply and Pollution Control Division, the Fish and Game Department, the Rockingham County Conservation District, and the Rockingham Planning Commission on wise land stewardship of the watershed.

The costs of instituting these nonregulatory programs are expected to be variable, but relatively low. For example, any assistance provided by the Rockingham Planning Commission is either at reduced cost or no cost, as part of Stratham's annual membership in the Commission.

The most expensive programs include hydrogeologic studies and land acquisition. Costs associated with land conservation efforts involving donations of land and easements would involve survey, legal, and recording fees. The outright purchase of these lands or the purchase of development rights would obviously entail substantially greater costs.

Household Hazardous Waste collection and disposal costs, which can be expensive even in a regional program, may in the future be covered by the dues paid to the Lamprey Regional Solid Waste District. Matching funds are available from the Waste Management Division of the N.H. Department of Environmental Services.

Virtually all of these nonregulatory programs could probably be carried out by existing voluntary and paid manpower. It should not be necessary to hire additional personnel to conduct or supervise any of these activities with the possible exception of #2, establishing a septic system inspection program. Hydrogeologic studies, however, would require contracting with professional consultants.

Regulatory Programs

The Town of Stratham enforces a building ordinance, a zoning ordinance, subdivision regulations, and site plan review regulations. All have been reviewed and found to contain provisions specifically pertaining to water resource protection (except for the Building Ordinance).

All options for regulatory programs (required by the State's Administrative Rules for water resource plans) were considered, and the following new or revised regulatory programs are recommended in order to improve and/or enhance existing local water resource management and protection mechanisms:

1. An aquifer protection ordinance should be adopted by Stratham to protect its primary aquifers - the Stratham Hill, Bunker Hill, and Skinner Springs aquifers (depicted in Map F). As previously discussed, these areas warrant further water resource evaluation to determine their viability as municipal water supplies.

2. Erosion and sedimentation control regulations should be adopted by the Planning Board. These regulations provide standards and guidelines for development planning, for the purpose of controlling erosion and preventing sediment transport to wetlands and streams. The Rockingham County Conservation District has developed a model ordinance which the Town could use as a starting point.

3. Stratham should develop its own Underground Storage Tank (UST) regulations. Requirements to be considered are as follows:

   a) Require the removal of all abandoned tanks;

b) Ban all new underground heating oil tanks with a capacity of less than 1,100 gallons. These tanks need not be registered with the N.H. Water Supply and Pollution Control Division, thereby making them difficult to monitor and regulate;
c) Amend the Site Plan Review regulations to require development plans to identify the location, type, content and capacity of each proposed inground petroleum and chemical storage tanks in order to maintain a current inventory.

The N.H. Water Resources Action Project has developed other such guidelines which Stratham could use to develop and administer a local UST regulatory program (source: "Guidelines for Controlling Underground Storage Tanks", Tools for Community Water Supply Protection, N.H. Water Resources Action Project, 1985, prepared by Sharon F. Francis, N.H. Natural Resources Forum, Sky Farm, Box 341, Charlestown, NH 03603).

4. Large subdivisions and the associated roads and drainage facilities can have a negative impact on the environment, including water resources. The Subdivision Regulations should be amended to require an environmental impact study for large subdivisions to insure that the damage to the environment is minimized.

5. The types of land uses reviewed under the Site Plan Review regulations may require large volumes of water. These uses have the potential to deplete other wells in the area relying on the same groundwater resource for their supplies. Therefore, if a proposed land use requires large water supply volumes, the following information should be required:

a) The on-site location of the proposed well, its expected yield, pumping duration and quantity (maximum) of water withdrawn;
b) Subsurface groundwater conditions (e.g., saturated thickness, direction of groundwater flow, etc.);
c) Location of abutting water supply wells, amount of water being pumped, and maximum capacity needed;
d) Effect of proposed use on abutting water supplies.

6. Amend the Subdivision and Site Plan Review regulations as follows:

a) Promote the use of catch basins designed to trap oil and sediments;
b) Encourage road designs that require less use of de-icing chemicals (e.g. roads with minimal slope and/or turning radius, etc.);
c) Require that runoff be retained on-site and that no degradation of water quality shall occur. This will provide for groundwater recharge through the infiltration of retained water. This provision will also safeguard abutting properties from increased flows which can cause flooding and erosion damage.

9. The Stratham Conservation Commission should consider mapping and documenting prime wetlands as authorized under RSA 483-A:7, and subsequently recommend their adoption as part of the Zoning Ordinance in accordance with RSA 675:3. The State of New Hampshire Wetlands Board is required to give special consideration to prime wetlands during the review of dredge and fill permit applications.

Generally, the cost of preparing proposed amendments to regulations and ordinances is minimal. Technical assistance can be provided at low or no cost by the Rockingham Planning Commission or the Rockingham County Conservation District. There would be some expense involved with complying with the statutory

requirements for the publication of hearing notices. The Town should not need to hire any personnel for the preparation of the proposed amendments to regulations and ordinances.

Unless the members of the Conservation Commission possess certain technical qualifications relative to the mapping and identification of wetland areas or can obtain voluntary assistance from qualified residents, some funding may have to be budgeted for training or the provision of limited technical assistance for prime wetlands mapping.

Since the goal of the surface and groundwater portions of this Plan is to assure that local land use decisions resulting from this planning process are based upon the most comprehensive and reliable scientific and technical information available, it is important that all implementing ordinances and regulations include: (1) a process that allows applicants for local approvals to present documented scientific and technical information which differs from the information used to prepare this Plan; and (2) mechanisms that would enable local decision makers to consider the scientific and technical information submitted by the applicants prior to making a final decision.

APPENDICES

SUMMARY OF WELL COMPLETION REPORT DATA FOR THE [illegible] OF STRATHAM

WRB#	WELL#	NAME	ROAD	MAP	PARCEL	ELEV	DCOMP	USE	RSN	TYPE	TOTD	BDKD	CASING	YTM	YTD	YTQ	SWL	OVERBURDEN	GC	NOTE
[illegible] 0165	3-501	P. Chapman					86/[illegible]	1	1	1	[illegible]	25.[illegible]	42.00	3	1.50	15.00	15.00	[illegible]	2	
[illegible]	177-105	J. D[illegible]	[illegible] Apple Way			[illegible]	84/[illegible]	1	1	1	[illegible]	10.[illegible]	[illegible]	3		[illegible]		[illegible]	[illegible]	
[illegible].0142	177-598	Rowman Homes	Apple Way		[illegible]		86/[illegible]	1	1	1	[illegible]	40.00	[illegible]	3		5.00		[illegible]	[illegible]	
[illegible]	177-42	M. Nemo	Apple Way			[illegible]	84/[illegible]	[illegible]	[illegible]	1	[illegible]	100.[illegible]	[illegible]	[illegible]		[illegible]		3	[illegible]	
[illegible]	177-397	R. Houghton	Apple Way		[illegible]		86/[illegible]	1	1	1	[illegible]	115.00	128.[illegible]	3		[illegible]		[illegible]	2	
225.0358	457-17-89	S. [illegible]	Apple Way	2	[illegible]		89/[illegible]	1	1	1	300.0	1[illegible]	[illegible]	3	1.00	15.00		1-4	2	[illegible]
225.02[illegible]	406-843	Four Star Bldrs	Appleway				87/[illegible]	1	1	1	202.[illegible]	151.00	[illegible]	3	0.50	[illegible]		[illegible]	[illegible]	[illegible]
[illegible]	177-559	K. Chase	Barker Rd		[illegible]		86/[illegible]	1	1	1	250.0	5.00	20.00	3		25.00		4	2	
225.0062	406-237	D. Cook	Barker Rd			60.0	85/[illegible]/11	1	1	1	90.0	15.00	21.00	3	0.50	15.00		2	3	
[illegible]	177-692	M. [illegible]chel	Barker Rd				87/[illegible]	1	1	1	280.0	12.00	21.00	3		[illegible]		12	2	
[illegible]	177-602	B. Roy	Barker Rd		16		87/11/07	1	1	1	140.0	38.00	140.00	3		12.00		2	2	
[illegible]0002	177-14	M & J Bldrs	10 Benjamin Rd			70.0	84/[illegible]/10	1	1	1	220.0	6.00	33.00	3		75.00		3	3	
[illegible].0003	177-15	M & J Bldrs	11 Benjamin Rd			60.0	84/[illegible]/10	1	1	1	140.0	5.00	50.00	3		24.00		3	3	
225.0011	177-[illegible]	M & J Bldrs	12 Benjamin Rd			60.0	84/[illegible]/09	1	1	1	120.0	10.00	30.00	3		[illegible]		12	2	
[illegible]	177-27	M & J Bldrs	[illegible] Benjamin Rd			50.0	84/[illegible]	1	1		[illegible]	[illegible]	[illegible]	3		[illegible]		12	3	
[illegible]0018	177-47	M & J Bldrs	17 Benjamin Rd			50.0	84/[illegible]/07	1	1	1	[illegible]	[illegible]	[illegible]	3		[illegible]		[illegible]	[illegible]	
[illegible]	177-29	M & J Bldrs	7 Benjamin Rd			70.0	84/[illegible]/09	1	1	1	160.0	15.[illegible]	75.00	3		[illegible]		[illegible]	2	
[illegible]	177-[illegible]	C. [illegible]	[illegible] Ave			100.0	85/[illegible]/16	1	1	1	100.0	6.00	23.00	3		10.00		2	1	
225.0007	177-25	Kirriemuir Condos	off Bunker Hill Ave			80.0	84/[illegible]/02		1	1	320.0	4.00	21.00	3		8.00		1	2	
225.0215	406-691	Burkridge Homes Bldrs	Bunker Hill Ave				86/[illegible]/20	1	1	1	262.0	89.00	103.00	3	0.50	20.00		1	2	
225.0329	177-919	R. Riedel	Bunker Hill Ave		138		88/09/22	1	1	1	260.0	40.00	60.00	3		8.00		2	3	
225.0071	177-112	Develco of Stratham Inc	Bunker Hill Ave			120.0	84/10/19	1	1	1	230.0	21.00	62.00	3		10.00		2-1	1	
225.0287	177-744	C. Sewall	Bunker Hill Ave		97		87/[illegible]/28	1	1	1	260.0	30.00	73.00	3		45.00		2	2	
225.0039	406-77	L. Carbonneau	Bunker Hill Ave			110.0	84/[illegible]/21	1	1	1	170.0		60.00	3		9.00			3	
225.0344	177-919	R. Riedel	Bunker Hill Ave		Lot 138		88/[illegible]/22	1	1	1	260.0	40.00	60.00	3		8.00		2-4	2	
225.0300	177-760	Perro Structures	off Bunker Hill Rd				87/[illegible]/29	1	1	1	100.0	16.00	33.00	3		100.00		4	2	
225.0110	177-367	F. Emanuel	Bunker Hill Rd		37		85/[illegible]/20	1	1	1	100.0	25.00	42.00	3		18.00		12	2	
225.0214	177-576	Seaview Bldrs	Butterfield Ln		17		86/[illegible]/17	1	1	1	220.0	15.00	25.00	3		5.00		1-4	2	
225.0169	177-470	Reed & Small	Butterfield Ln		23		86/06/23	1	1	1	300.0	35.00	72.00	3		15.00		4	2	
225.0188	177-523	R. Scamman	Chapman Rd		2		86/[illegible]9/08	1	1	1	400.0	30.00	45.00	3		1.50		2	2	
225.0021	177-55	Erick	Chapman Rd			100.0	84/06/29	1	1	1	160.0	12.00	50.00	3		10.00		3	2	
225.0323	177-851	V. Crisp	Coach Rd		Lot 3		88/[illegible]/01	1	1	1	200.0	15.00	28.00	3		60.00		3	2	
225.0130	177-440	R. J. Lavin Co	Coach Rd				86/04/23	1	1	1	200.0	28.00	40.00	3		6.00		3	2	
225.0181	406-626	R. MacDonald	Coach Rd				86/10/04	1	1	1	104.0	25.00	27.00	3	0.75	50.00		12	2	
225.0116	177-394	D. Cook	Coach Rd		15		86/[illegible]/14	1	1	1	120.0	40.00	53.00	3		11.00		12-4	2	
225.0173	406-516	O. Peck	Coach Rd		12		86/[illegible]/23	1	1	1	200.0	30.00	42.00	3	1.00	5.00		14	2	
225.0118	3-403	W. Stowell	Coach Rd		8		86/02/03	1	1	1	204.0	40.00	95.00	3	2.00	15.00	15.00	3	2	YL
225.0217	406-744	B. Gerkin	Coach Rd				87/02/05	1	1	1	142.0	10.00	21.00	3	1.00	6.00		1	2	
225.0172	406-514	M. Associates	Coach Rd		6		86/08/22	1	1	1	142.0	52.00	63.00	3	1.25	5.00		3	2	
225.0223	406-835	Pre Inc	Coach Rd				87/05/18	1	1	1	282.0	67.00	63.00	3	0.50	25.00		13	2	
225.0178	1236-2	Lamprey Bldrs	Coach Rd		2		86/07/25	1	1	1	185.0	15.00	21.00	3	1.00	10.00		1-16	2	
225.0123	406-418	M. Associates	Coach Rd		16		86/04/28	1	1	1	120.0	32.00	42.00	3	1.50	50.00		2	2	
225.0263	177-691	J. Sterritt	Coach Rd		17		87/09/03	1	1	1	140.0	12.00	21.00	3		12.00		4	2	
225.0127	457-86-46	T. Vandewater	Coach Rd		12		86/04/28	1	1	1	225.0	60.00	74.00	3	1.00	10.00		2-4	2	YL
225.0343	177-850	M. Cook	Coach Rd		Lot 13		88/06/01	1	1	1	140.0	25.00	50.00	3		9.00		4	2	
225.0146	457-86-45	A. Oliveira	Coach Rd		4		86/04/26	1	1	1	300.0	40.00	50.00	3	1.00	5.00		1-2-4	2	YL
225.0280	177-734	M & J Bldrs	off Coach Rd Humes Ct		4		87/10/14	1	1	1	180.0	15.00	26.00	3		30.00		2	2	
225.0281	177-736	M & J Bldrs	off Coach Rd Humes Ct		2		87/10/14	1	1	1	140.0	30.00	65.00	3		15.00		3	2	
225.0326	177-869	R. Matt	Country Farm Est		Lot 22		88/07/01	1	1	1	160.0	45.00	63.00	3		15.00		4	2	
225.0265	208-2554	Garneau Const	Country Farm Est		4		87/07/13	1	1	1	125.0	45.00	60.00	3	1.00	30.00	15.00	2	3	
225.0244	208-2555	Garneau Const	Country Farm Est		11		87/07/13	1	1	1	145.0	30.00	40.00	3	1.00	8.00	15.00	2	3	
225.0282	177-757	J. Pearson	County Farm Est		16		87/[illegible]/10	1	1	1	200.0	70.00	83.00	3		25.00		4	2	
225.0220	406-785	F. McKenna	County Farm Est				87/05/25	1	1	1	182.0	44.00	60.00	3	1.00	6.00		1	2	
225.0233	177-627	B. Bristow	County Farm Est				87/[illegible]/17	1	1	1	120.0	30.00	48.00	3		10.00		3	2	
225.0180	406-598	J. McCullough	Crest View Ter				86/[illegible]/12	1	1	1	142.0	12.00	21.00	3	1.00	60.00	5.00	12	2	

WRB#		NAME	ROAD			ELEV														
225.0272	457-55-87	W. McDonald	Crestview Rd				87	1	1	1	200.0	14.00	25.00		1.00	[illegible]		[illegible]	1	YL
225.0104	406-356	J. McCullough Const	Crestview Terr		45		85	1	1	1	102.0	11.00	21.00		0.50	[illegible]		2	2	
225.0017	177-44	Frois Const	Depot & Dunbarton Oaks			60.0	84 /25		1	1	120.0	8.00	21.00	3		10.00		2	2	
225.0052	177-150	Glengarry Condo	off Depot Rd			100.0	85 /10	1	1	1	300.0	5.00	23.00	3		30.00		6	1	CM:08(6)=shale
225.0053	177-151	Glengarry Condo	off Depot Rd			100.0	85 /14	1	1	1	505.0	5.00	27.00	3		30.00		6	1	CM:08(6)=shale
225.0054	177-163	Glengarry Condo	off Depot Rd			100.0	85 3/04	1	1	1	300.0	5.00	27.00	3		25.00		3	1	
225.0115	177-391	Perro Structures	Depot Rd				86 /10	1	1	1	140.0	18.00	31.00	3		10.00		2	2	
225.0044	177-110	J. Schwartz	Depot Rd			100.0	84 /18	1	1	1	205.0	4.00	21.00	3		4.00		1	2	
225.0045	406-246	D. Hamel	Depot Rd			120.0	85 /17	1	1	1	150.0	15.00	21.00	3	1.50	6.00		2	2	
225.0198	177-546	W. Saidla	Depot Rd				10/09	1	1	1	240.0	15.00	25.00	3		5.00		3	2	
225.0043	177-337	Swale Corp	Depot Rd				85 /15	1	1	1	100.0	14.00		3		40.00		2	2	
225.0046	177-104	J. Dabney	Depot Rd			80.0	84 /04	1	1	1	140.0	6.00	31.00	3		50.00		2	1	
225.0175	406-558	JR Devel Inc	Depot Rd		19		86 /15	1	1	1	162.0	12.00	21.00	3	1.25	7.00		124	2	
225.0174	457-86-108	D. Packard	Depot Rd		21		86 /05	1	1	1	200.0	20.00	40.00	3	1.00	15.00		4	2	YL
225.0237	177-597	American Land	Depot Rd & Dunbarton Oaks		30		87 /06	1	1	1	100.0	18.00	31.00	3		100.00		1	2	
225.0238	177-598	American Land	Depot Rd & Dunbarton Oaks				87 /06	1	1	1	100.0	50.00	64.00	3		100.00		1	2	
225.0314	204-634	J. Farrell	Doe Run Ln		62		86 /12	1	1	1	100.0	50.00	60.00	3	0.25	25.00	20.00	3-4	2	
225.0313	177-819	Household Realty Trust	Doe Run Ln				88 /21	1	1	1	140.0	12.00	26.00	3		50.00		1	2	
225.0168	177-469	T. Bayer	Doe Run Ln		28		86 /20	1	1	1	100.0	50.00	63.00	3		100.00		1-4	2	
225.0126	204-635	J. Farrell	Doe Run Ln		1		86 /13	1	1	1	150.0	55.00	70.00	3	0.25	12.00	20.00	1-4	2	
225.0321	203-2659	Northern Devel Corp	Drurg Plains		Lot 8		87 /16	1	1	1	125.0	87.00	100.00	3	1.00	10.00	20.00	4	3	
225.0157	177-502	Henry M. Construction	Drury Plain Rd				86 /05	1	1	1	180.0	30.00	67.00	3		7.50		1	2	
225.0228	177-642	Lamprey Bldrs	Drury Plains Rd		10		87 /26	1	1	1	140.0	70.00	90.00	3		25.00		34	2	
225.0129	177-443	Rowman Homes	Drury Rd		5		86 /30	1	1	1	180.0	80.00	90.00	3		60.00		1	2	
225.0345	177-926	D & G Const	Dunbarnton Oaks		Lot 31		88 /03	1	1	1	180.0	21.00	40.00	3		7.00		4	2	
225.0022	177-61	T. Wood	21 Dunbarton Oaks			50.0	84 /26	1	1	1	80.0	15.00	30.00	3		20.00		4-1	2	
225.0049	177-124	M. Drake	22 Dunbarton Oaks			30.0	84 /14	1	1	1	180.0	15.00	24.00	3		20.00		1	1	
225.0050	177-123	D. Thibodeau	23 Dunbarton Oaks			40.0	84 /13	1	1	1	120.0	20.00	30.00	3		15.00		1	1	
225.0051	177-111	S. Sadur	29 Dunbarton Oaks			20.0	84 /18	1	1	1	205.0	15.00	35.00	3		10.00		1	1	
225.0023	177-60	G. Farina	30 Dunbarton Oaks			30.0	84 /26	1	1	1	120.0	15.00	30.00	3		10.00		1-4	2	
225.0047	177-126	J. Phoenix	34 Dunbarton Oaks			20.0	84 /15	1	1	1	60.0	15.00	46.00	3		75.00		1	1	
225.0310	177-329	D & G Const	Dunbarton Oaks		Lot 32		88 /11	1	1	1	140.0	40.00	63.00	3		20.00		4	2	
225.0231	177-620	Stratham Homes Inc	Dunbarton Oaks		23		87 /22	1	1	1	120.0	3.00	20.00	3		12.00		1	2	
225.0346	177-929	Stratham Homes	Dunbarton Oaks				88	1	1	1	140.0	10.00	30.00	3		18.00		1-4	2	
225.0316	177-832	D & G Const	Dunbarton Oaks		Lot 29		88 /2	1	1	1	140.0	25.00	42.00	3		15.00			2	
225.0325	177-845	D & G Const	Dunbarton Oaks		Lot 26		88 /24	1	1	1	175.0	5.00	26.00	3		60.00		4	2	
225.0286	177-743	Stratham Homes	Dunbarton Oaks		20		87 /27	1	1	1	200.0	8.00	30.00	3		10.00		24	2	
225.0108	177-300	Orchard Homes	Dunbarton Oaks		14		85 /24	1	1	1	100.0	20.00	33.00	3		30.00		1-4	2	
225.0095	[illegible]	Orchard Homes	Dunbarton Oaks				85	1	1	1	175.0	15.00		3		60.00		1-4	2	
[illegible]	[illegible]	Stratham Homes [illegible]	Dunbarton Oaks		13		87		1	1	100.0	5.00	20.00	3		[illegible]			2	
[illegible]		Stratham Homes	Dunbarton Oaks		17		87	1	1	1	100.0	4.00	20.00	[illegible]		30.00		6	2	[illegible]
[illegible]	[illegible]	Orchard Homes	[illegible]				84	1	1	1	160.0	16.00		[illegible]		[illegible]			[illegible]	
[illegible]	[illegible]	D & G Const	Dunbarton Oaks		[illegible]		88	1	1	1	200.0	[illegible]	20.00	[illegible]		[illegible]				
225.0114	177-380	Orchard Homes	Dunbarton Oaks		[illegible]		85	1	1	1	100.0	30.00	50.00	3		10.00		1-4	2	
225.0385	177-792	Stratham Homes Inc	Dunbarton Oaks		[illegible]		87	1	1	1	200.0	10.00	40.00	3		10.00		24	2	
[illegible]	[illegible]	D & G Const	Dunbarton Oaks		Lot [illegible]		88	1	1	1	230.0	21.00	42.00	3		30.00		1	2	
[illegible]	[illegible]	Stratham Homes	Dunbarton Oaks		Lot [illegible]		88	1	1	1	160.0	10.00	20.00	3		100.00		1	2	
[illegible]	[illegible]	[illegible]	Dunbarton Oaks				88	1	1	1	120.0	12.00	21.00	3		10.00		2	2	
[illegible]	[illegible]	M & J Bldrs	Eastbrook [illegible]				84	1	1	1	140.0	9.00		3		40.00		2	2	
[illegible]	[illegible]	[illegible]	[illegible]				85		1	1	[illegible]	10.00				[illegible]		1	2	
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		88		1	1		105.00	[illegible]	[illegible]	[illegible]	[illegible]			3	
[illegible]	[illegible]	[illegible]	[illegible]				86	1	1	1	[illegible]	40.00	[illegible]	3		[illegible]		2	2	
[illegible]	[illegible]	[illegible]	[illegible]			60.0	85	1	1	1	[illegible]	30.0	[illegible]				0.01	[illegible]	2	[illegible]
[illegible]	[illegible]		[illegible]		[illegible]		86	1	1	1	[illegible]	15.00	[illegible]	3	1.00	[illegible]			2	[illegible]
[illegible]		[illegible]	[illegible]				88		1	1	[illegible]	0.00	[illegible]	3					[illegible]	
[illegible]							87		1			15.00	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	2	
225.[illegible]		[illegible]	[illegible]		[illegible]		88	1	1	1	[illegible]	55.00	[illegible]		[illegible]	[illegible]		4	2	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1		88	1	1	1	[illegible]	70.00	[illegible]		0.25	50.00		2-4	2	

225.0219	406-779	Bunkridge Homes Bldrs	Greenwood Commons		2		87/[illegible]	1	[illegible]	[illegible]	[illegible]	30.00	[illegible]	3	0.50	100.00		2	2	
225.0155	177-501	Swale Corp	Guinea Rd		6		86/[illegible]	1	1	1	160.0	50.00	75.00	3		50.0		3-12	2	
225.0[illegible]	406-[illegible]	R. Ma[illegible]	[illegible] Rd				87/[illegible]	1	1	1	[illegible]	[illegible]	[illegible]	3	[illegible]	[illegible]		12	2	
225.0250	177-794	Rowman Homes	Guinea Rd		Lot [illegible]		87/[illegible]	1	1	[illegible]	[illegible]	[illegible]	[illegible]	3		[illegible]		2	2	
[illegible]	[illegible]	[illegible] Const	Heights Rd		[illegible]		86/	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	
[illegible]	[illegible]	P. Chapman	1135 Heights Rd				86/[illegible]	1	1	1	[illegible]	25.[illegible]	[illegible]	3	[illegible]	[illegible]	[illegible]	3	[illegible]	
[illegible]	[illegible]	[illegible]	Heights Rd				85/	1	1	1	[illegible]	[illegible]				[illegible]			[illegible]	
225.00[illegible]	[illegible]	F. Chapman	Heights Rd			[illegible].0	84/[illegible]	1		1	[illegible]	50.00	[illegible]	3	[illegible]	[illegible]	[illegible]	2-4	[illegible]	[illegible]
225.00[illegible]	177-22	[illegible]zzaro	Heights Rd			100.0	84/[illegible]	1	1	1	[illegible]	30.00	[illegible]	[illegible]		5.50		2-4	2	
[illegible]	177-495	R. [illegible]	Heights Rd		2		86/[illegible]	1	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		4	2	
225.0067	177-188	T. Kirtland	Heights Rd			[illegible].0	85/[illegible]	1	1	1	[illegible]	30.00	[illegible]	3		[illegible]		2-4	2	
225.0089	177-223	R. Scammon	Heights Rd			120.0	85/[illegible]	1	1	1	240.0	50.00	[illegible]	3		12.00		2-4	2	
225.0229	177-634	C. Rogalski	Heights Rd		40		87/[illegible]	1	1	1	180.0	100.00	120.00	3		7.[illegible]		3	2	
225.0154	177-499	S. Harrington	Heights Rd				86/[illegible]	1	1	1	200.0	50.00	62.00	3		6.00		2		2
225.0090	177-178	J. Merchant	Heights Rd			120.0	85/[illegible]24	1	1	1	240.0	44.00	60.00	3		50.00		1-4	2	
225.0100	177-324	Ferro Structures	Heights Rd				85/[illegible]	1	1	1	200.0	30.00		3		20.00		4	2	
225.0102	177-312	Ferro Structures	Heights Rd				85/[illegible]	1	1	1	200.0	36.00		3		5.50		12-4	2	
225.0066	177-155	Swale Corp	Heights Rd			160.0	85/[illegible]	1	1	1	140.0	20.00	58.00	3		5.00		3	1	
225.00[illegible]	[illegible]-258	F. Chapman	Heights Rd			120.0	85/[illegible]	1	1	1	302.0	50.00	7[illegible]	3	1.00	8.00		2-4	1	YL
225.0092	177-247	D. Mackenzie	Heights Rd			120.0	85/[illegible]6	1	1	1	200.0	35.00	52.00	3		5.00		2-4	2	
225.0222	457-87-48	Happy Home Bldrs	Heights Rd	2228-D	15		87/[illegible]	1	1	1	500.0	25.00	40.00	3	1.00	8.00		124	2	
225.0098	177-296	R. Scamman	Heights Rd & Bunker Hill				85/[illegible]/23	1	1	1	240.0	32.00		3		8.00		2	2	
225.0029	177-93	B. Krooss	Hersey Ln			80.0	[illegible]/17	1	1	1	100.0	3.00	21.00	3		15.00		4	2	
225.0305	457-241-87	Spectrum Devel Corp	Hersey Ln Ext		Lot 8A		87/[illegible]/04	1	1	1	300.0	65.00	80.00	3	1.00	1.50		124	2	YL
225.0261	177-656	Cedar Point Devel	High Point Rd		Lot 4		[illegible]/24	1	1	1	200.0	75.00	101.00	3		12.00		12	2	
225.0292	457-204-87	C. & L. Drenkhahn	96 High St				[illegible]/28	1	1	1	200.0	50.00	65.00	3	1.00	12.00		12	1	YL
225.0137	177-412	Symmes Assoc	off High St				[illegible]/06	1	1	1	140.0	33.00	45.00	3		30.00		12-4	2	
225.0135	177-413	Symmes Assoc	off High St		2		[illegible]6/[illegible]/06	1	1	1	140.0	33.00	45.00	3		50.00		12-4	2	
225.0330	177-884	V. Crisp	High St		Lot 3		[illegible]/03	1	1	1	300.0	68.00	84.00	3		4.00		14	2	
225.0195	177-518	B. Wilkins	High St				[illegible]/04	1	1	1	200.0	63.00	80.00	3		45.00		2	2	
225.0266	177-667	Vern Crisp & Sons	High St				[illegible]7/10	1	1	1	220.0	60.00	70.00	3		12.00		12	2	
225.0171	406-534	M. Assoc	High St				[illegible]9/01	1	1	1	180.0	30.00	42.00	3	1.50	6.00		34	2	
225.0249	177-655	Cedar Point Devel	High St		Lot 3		[illegible]/23	1	1	1	220.0	85.00	105.00	3		10.00		34	2	
225.0111	177-374	Kilmory Realty Trust	High St		14		[illegible]/27	1	1	1	100.0	12.00	28.00	3		10.00		12	2	
225.0042	177-233	Swale Corp	High St			120.0	[illegible]/19	1	1	1	160.0	35.00	47.00	3		10.00		2	1	
225.0246	208-2448	R. Dow	High St		28		[illegible]/10	1	1	1	265.0	70.00	80.00	3	1.00	15.00	3.00	3	3	
225.0331	177-885	V. Crisp	High St				[illegible]/02	1	1	1	180.0	58.00	84.00	3		20.00		4	2	
225.0112	177-375	Kilmory Realty Trust	High St		15		[illegible]/27	1	1	1	120.0	12.00	26.00	3		6.00		12	2	
225.0265	177-666	Vern Crisp & Sons	High St				[illegible]7/10	1	1	1	260.0	62.00	80.00	3		25.00		2	2	
225.0335	177-915	Corner Stone School	High St				[illegible]9/14	1	1	1	175.0	10.00	21.00	3		60.00		2	2	
225.0182	177-564	B. Wilkins	High St				[illegible]6/10/27	1	1	1	200.0	55.00	70.00	3		7.00		34	2	
225.0295	177-800	Quality Homes	High St		Lot 1		[illegible]8/03/08	1	1	1	200.0	65.00	84.00	3		6.00			3	
225.0205	177-570	P. Cryans	Highland Tidewater Rd		9		[illegible]/04	1	1	1	140.0	20.00	31.00	3		25.00		3	2	
225.0082	177-164	R. Scammon	29 Holmgren Acres			120.0	[illegible]5/03/04	1	1	1	140.0	30.00	42.00	3		8.00		2-4	1	
225.0101	177-316	J. Scammon	Holmgren Acres				[illegible]5/09/18	1	1	1	160.0	38.00		3		15.00		23	2	
225.0085	177-197	Henry M. Const	Holmgren Acres			100.0	[illegible]5/05/0[illegible]	1	1	1	360.0	1.00	42.00	3		4.00		2-4	2	
225.0097	177-298	R. Scammon	Holmgren Acres			[illegible]	[illegible]/08/23	1	1	1	260.0	35.00		3		8.00		2	2	
225.0081	177-179	Henry M. Const	Holmgren Acres			140.0	[illegible]/04/08	1	1	1	300.0	35.00	47.00	3		3.00		1-4	1	
225.0083	177-121	M & J Bldrs	Holmgren Acres			120.0	[illegible]/11/13	1	1	1	120.0	25.00	45.00	3		7.00		1-2	1	
225.0079	177-122	M & J Bldrs	Holmgren Acres			120.0	[illegible]/11/13	1	1	1	80.0	30.00	42.00	3		50.00		2	1	
225.0084	177-145	M & J Bldrs	Holmgren Acres			140.0	[illegible]/12/11	1	1	1	100.0	3.00	51.00	3		6.00		124	1	
225.0080	177-194	Bartley	Holmgren Acres			120.0	[illegible]/04/04	1	1	1	320.0	19.00	42.00	3		1.50		1-4	1	
225.0026	177-64	M & J Bldrs	Holmgren Acres			140.0	[illegible]	1		1	140.0	20.00	47.00	3		30.00		3	3	
225.0086	177-152	M & J Bldrs	Holmgren Acres				[illegible]/01/16	1	1	1	80.0	10.00		3		50.00		1	1	
225.0187	177-524	W. Biery	Holmgren Farm Rd				[illegible]/09/08	1	1	1	260.0	38.00	46.00	3		60.00		1	2	
225.0167	177-466	D. Lawlor	Holmgren Rd		28		[illegible]6/16	1	1	1	200.0	35.00	65.00	3		6.00		2-1	2	
225.0308	177-824	Develco of Stratham	Humes Ct		Lot 12		[illegible]/02	1	1	1	140.0	40.00	63.00	3		15.00		14	2	
225.0304	177-763	Lamprey Bldrs	Humes Ct		Lot 10		[illegible]7/[illegible]/17	1	1	1	140.0	20.00	42.00	3		20.00		2	2	

AREA	WELL#	NAME	ROAD	MAP	PARCEL	ELEV	C	P	USE	RSN	TYPE	TOTD	BDRO	CASL	[illegible]	YID	YTD	SWL	OVERBURDEN	GC	NOTE
225.0296	1236-	Lamprey Bldrs	Humes Ct		Lot 7		88	/07	1	1	1	145.0	30.00	45.00	3	1.00	7.00	9.00	14	2	
225.0312	177-	Lamprey Bldrs	Humes Ct		Lot 11		88	/13	1	1	1	140.0	25.00	42.00	3		100.00		14	2	
225.0337	177-910	M & J Bldrs	Humes Ct		Lot 13		88	/08	1	1	1	250.0	45.00	62.00	3		12.00		24	2	
225.0299	177-776	S. Manseau	Humes Ct		Lot 1		87	/08	1	1	1	140.0	15.00	46.00	3		15.00		2	2	
225.0311	177-	M. Eichler	Humes Ct		Lot 5		88	/13	1	1	1	100.0	19.00	42.00	3		15.00		4	2	
225.0327	177-879	M & J Bldrs	Humes Ct		Lot 16		88	/07/26	1	1	1	140.0	12.00	27.00	3		100.00		6	2	
225.0351	177-942	P. Structures	Jewett Hill Portsmouth Ave				88	/10/31	1	1	1	200.0	12.00	30.00	3		65.00		4	2	
225.0031	177-90	Orchard Homes	Kirriemuir Condos			80.0	84	/14	1	1	1	140.0	13.00	23.00	3		30.00		2	2	
225.0317	177-814	Develco of Stratham	Long Hill		Lot 18		88	/04/12	1	1	1	600.0	120.00	146.00	3		30.00		4	2	
225.0348	177-960	G. & J. Sterritt	Long Hill Rd		Lot 17		88	/12/20	1	1	1	200.0	125.00	147.00	3		10.00		1	2	
225.0314	177-817	MacMillin Co Inc	off Lovell Rd				88	/04/19	7	1	1	140.0	26.00	45.00	3		60.00		2	2	
225.0315	177-816	MacMillin Co Inc	off Lovell Rd				88	/04/18	7	1	1	100.0	15.00	44.00	3		30.00		2	2	
225.0302	177-783	Aberdeen Realty Trust	Lovell Rd				88	/01/13	1	1	1	200.0	12.00	42.00	3		15.00		6	2	CH:OB(6)=boulders
225.0243	177-619	R. Scammon	Lovell Rd				87	/04/02	1	1	1	180.0	32.00	42.00	3		20.00		2	2	
225.0284	177-741	Glen Gary Inc	Lovell Rd				87	/10/26	1	1	1	260.0	15.00	30.00	3		4.00		2	2	
225.0121	367-61	Barker	Lovell Rd	74	3		85	/08/12	1	1	1	300.0	60.00	101.00	3	0.33	1.00		24	2	
225.0301	177-782	Aberdeen Realty Trust	Lovell Rd				88	/01/12	1	1	1	260.0	12.00	39.00	3		15.00		12	2	
225.0333	177-924	F. Silva	2 Mark Ave				88	/09/30	1	1	1	175.0	20.00	40.00	3		10.00		1	2	
225.0069	177-142	Develco Inc	Meadow's Condo			120.0	84	/12/10	1	1	1	260.0	30.00	63.00	3		10.00		2	2	
225.0065	177-144	Develco Inc	Meadow's Condo			120.0	84	/12/11	1	1	1	220.0	30.00	50.00	3		20.00		24	2	
225.0067	177-180	Develco Inc	Meadow's Condo			120.0	85	/04/09	1	1	1	180.0	42.00	50.00	3		15.00		2	1	
225.0068	177-181	Develco Inc	Meadow's Condo			120.0	85	/04/09	1	1	1	160.0	42.00	50.00	3		20.00		2	1	
225.0064	177-222	Develco Inc	Meadow's Condo			120.0	85	/05/31	1	1	1	260.0	40.00	64.00	3		30.00		2	2	
225.0066	177-143	Develco Inc	Meadow's Condo			120.0	84	/12/10	1	1	1	200.0	30.00	50.00	3				4	3	
225.0070	177-141	Develco Inc	Meadow's Condo			120.0	84	/12/07	1	1	1	160.0	40.00	63.00	3				2	3	
225.0332	177-887	E. Geslien	Oak Ln		Lot 32		88	/03/04	1	1	1	240.0	30.00	42.00	3		8.00		1	2	
225.0342	177-882	M & J Bldrs	Oakridge Rd		Lot 5		88	/03/01	1	1	1	200.0	30.00	42.00	3		10.00		12	2	
225.0341	177-883	Lamprey Bldrs	Oakridge Rd		Lot 4		88	/03/01	1	1	1	180.0	25.00	42.00	3		15.00		12	2	
225.0336	177-912	M & J Bldrs	Orchard Dr		Lot 7		88	/12	1	1	1	275.0	60.00	80.00	3		10.00		2-4	2	
225.0328	177-878	M. Fonet	Orchard Hill Park		Lot 6		88	/07/25	1	1	1	300.0	50.00	70.00	3		5.00		2-3	2	
225.0347	177-933	Rowman Homes	Orchard Park		Lot 12		88	/05	1	1	1	180.0	55.00	70.00	3		30.00		4	2	
225.0014	177-36	Emanuel Co Inc	Patriots Rd			60.0	84	/05/17	1	1	1	320.0	12.00	21.00	3		3.00		4	2	
225.0028	177-73	F. Emanuel	Patriots Rd			60.0	84	/14	1	1	1	400.0	3.00	21.00	3		3.00		3	2	
225.0334	177-923	R. Mullen	Perch Dr		Lot 5		88	/29	1	1	1	275.0	30.00	44.00	3		5.00		1	2	
225.0117	457-86-2	S. Grenier	46 Pine Wood Dr				86	/09	1	1	1	200.0	40.00	56.00	3	1.00	30.00		2-4-2	2	YL
225.0235	177-609	F. Wentworth	152 Portsmouth Ave				87	/18	1	1	1	220.0	20.00	40.00	3		6.00		4-12	2	
225.0274	457-130-87	L. Bullard	152 Portsmouth Ave	11	39		87	/18	1	1	1	250.0	20.00	41.00	3	1.00	15.00		123	2	YL
225.0192	177-539	Emanuel Ent	Portsmouth Ave				86	/02	1	1	1	380.0	15.00	25.00	3		5.00		3	2	
225.0006	[illegible]	Exeter Area [illegible]	Portsmouth Ave			120.0	85	/24	7	1	1	450.0	30.00	142.00	3	1.00	10.50		4	2	
225.0339	177-827	Rockingham County Newspaper	Portsmouth Ave				88	[illegible]	1	1	1	655.0	18.00	[illegible]	3		30.00		4	2	
225.0134	177-[illegible]	M. Ponte	Portsmouth Ave				86	/05	1	1	1	120.0	16.00	[illegible]	3		60.00		4	2	
225.0230	[illegible]	[illegible] Hoyes	Portsmouth Ave				86	[illegible]	1	1	1	140.0	22.00	[illegible]	3		3.00		2	2	
225.0161	177-454	S. Abrams	Portsmouth Ave		273		86	[illegible]	1	1	1	400.0	22.00	[illegible]	3		[illegible]		2	2	
[illegible]	[illegible]	[illegible]	Portsmouth Ave				86	[illegible]	1	1	1	320.0	2.00	[illegible]	3		10.00		2	2	
225.0113	177-379	W. Walker	Portsmouth Ave		176		85	[illegible]	1	1	1	280.0	15.00	[illegible]	3		4.00		1	2	
225.0121	[illegible]	[illegible] Const	Portsmouth Ave				86	/29	1	1	1	205.0	28.00	[illegible]	3		18.00		3	2	YL
225.0191	177-540	Emanuel Ent	Portsmouth Ave				86	/02	1	1	1	300.0	15.00	[illegible]	3		7.00		3	2	
225.0125	[illegible]	[illegible] Farrell	Raeder Dr		2		86	[illegible]	1	1	1	160.0	35.00	50.00	3	0.25	10.00	20.00	4	2	
225.0141	[illegible]	Farrell, Martin, Pulliam	Raider Dr		2		87	/29	1	2	1	220.0	50.00	63.00	3	0.50	25.00	12.00	2	2	
[illegible]	[illegible]	[illegible]	Raider Dr				86	[illegible]	1	1	1	105.0	25.00	[illegible]	3	0.50	70.00	6.00	3	2	
[illegible]	177-515	[illegible] Bldrs	River Rd				86	[illegible]	1	1	1	[illegible]	15.00	[illegible]	3		12.00		4	2	
225.[illegible]	177-[illegible]	[illegible]	[illegible]		20		87	[illegible]	1	1	1	[illegible]	40.00	[illegible]	3		12.00		3	2	
225.[illegible]	[illegible]	[illegible]	[illegible] Rollins Farm			[illegible]	85	[illegible]	1	1	1	[illegible]	30.00	58.00	3		15.00		2	2	
[illegible]	[illegible]	[illegible] Bldrs	Rollins Farm [illegible]				84	[illegible]	1	1	1	[illegible]	45.00		3		4.00		3	2	
[illegible]	[illegible]	M & J Bldrs	Rollins Farm Dr			[illegible]	84		1	1	1	[illegible]	6.00	[illegible]	3		5.00		3	2	
225.[illegible]	[illegible]	[illegible]	Rollins Farm [illegible]				84	[illegible]	1	1	1	[illegible]	30.00		3		15.00		3	2	
225.[illegible]	[illegible]	M & J Bldrs	Rollins Farm Dr			[illegible]	84	[illegible]			1		15.00	60.00	3		10.00		3	3	
225.00[illegible]	177-[illegible]	M & J Bldrs	Rollins Farm Dr			[illegible]	84	[illegible]	1	1	1	140.0	40.00	50.00	3		8.00		2-4	2	

225.0318	177-813	Lampres Bldrs	Rollins Farm Dr	Lot 22		88/ /12	1	1	1	140.0	85.00	103.00	3		75.00		14	2		
225.0073	177-117	W. Biery	Rollins Farm Dr			84/ /04	1	1	1	200.0	30.00		3		15.00		1	2		
225.0077	177-113	M & J Hilgers	Rollins Farm Dr		150.0	84/ /-	1	1	1	150.0	50.00	50.00	3		20.00		2-6	2		
225.0225	177-65	Kuntz	Rollins Farm Dr		120.0	84/ /-	1	1	1	200.0	15.00	63.00	3		20.00			3		
225.0235	177-740	Lampres Bldrs	Rollins Farm Dr	2		87/ /-	1	1	1	140.0	85.00	103.00	3		75.00		14	2		
225.0089	177-121	W. Biery	Rollins Farm Dr			85/ /-	1	1	2	200.0	70.00		3		4.00		1	2		
225.0075	177-111	M & J Hilgers	Rollins Farm Dr		150.0	84/ /-	1	1	1	150.0	50.00	50.00	3		20.00		2-6	2		
225.0079	177-71	M. Rose	Rollins Farm Dr		120.0	84/ /-	1	1	1	120.0	35.00	63.00	3		15.00		4	2		
225.0127	1236-1	Lampres Bldrs	Rollins Farm Dr	23		86/ /-	1	1	2	140.0	85.00	103.00	3	1.00	20.00	25.00	1-14	2		
225.0246	177-699	W. Biery	Rollins Farm Dr	Lot 21		88/ /-	1	1	1	140.0	85.00	103.00	3		100.00		1	2		
225.0240	177-158	Demoulas Supermarket	Rte 101		65.0	85/ /-	1	1	1	140.0	8.00	21.00	3		25.00		6-6	2	CM:OB(6)=fill	
225.0242	177-611	H. Labonte	Rte 101			87/ /-	1	1	1	500.0	36.00	46.00	3		1.00		1-4	2		
225.0156	177-500	Monadnock Structures	Rte 101			86/ /-	1	1	1	415.0	15.00	25.00	3		25.00		4	2		
225.0106	177-389	Shaw's Supermarket	Rte 101			86/ /08	4	1	1	200.0	3.00	21.00	3		50.00			2		
225.0236	177-610	N. Labonte	Rte 101			87/ /-	1	1	1	500.0	36.00	46.00	3		10.00		1-4	2		
225.0041	177-112	Strathan Agway	Rte 101		80.0	85/ /09	1	1	1	200.0	9.00	21.00	3		20.00		6	2	CM:OB(6)=fill	
225.0105	177-390	Shaw's Supermarket	Rte 101			86/ /07	4	1	1	200.0	3.00	21.00	3		45.00		0	2		
225.0012	177-33	Fiberglass Plus	Rte 1010 Industrial Park		80.0	84/ /05	4	1	1	400.0	3.00	21.00	3		5.00		3	2		
225.0031	1-161	Sullivan Tire	Rte 108		83.0	84/ /01	4	1	1	202.0	15.00	36.00	3	1.00	5.00		4	2	YL	
225.0203	204-776	D. Sloan	Rte 108	25		86/ /06	1	1	1	105.0	10.00	20.00	3	0.50	9.00	10.00	2	2		
225.0037	367-67	A. Cote	Rte 108			84/ /02	1	2	1	160.0	40.00		3	0.25	6.00		1-4	2		
225.0119	367-13	Yankee Food Market	Rte 108	1		85/ /20	4	1	1	360.0	18.00	41.00	3	0.33	1.00		2	2		
225.0275	457-125-87	S. Bowers	Russell Dr	Lot 4		87/ /17	1	1	1	150.0	55.00	81.00	3	1.00	40.00		12	1	YL	
225.0216	457-86-171	J. Murphy	Russell Dr	2		86/09/13	1	1	1	225.0	70.00	81.00	3	1.00	25.00	30.00	124	2		
225.0147	457-86-104	Bowers Const & Devel	Russell Dr	1		86/12/30	1	1	1	250.0	59.00	67.00	3	1.00	10.00	20.00	2-3	2	YL	
225.0349	177-955	B. Robertson	Russell Rd			88/ /06	1	1	1	140.0	50.00	63.00	3		30.00		1	2		
225.0162	177-457	R. Scamman	Sandy Point Rd			8 /03	1	1	1	400.0	12.00	20.00	3		1.50		3	2		
225.0356	177-232	R. McFarland	Sandy Point Rd		120.0	8 /07	1	1	1	180.0	5.00	21.00	3		20.00		3	1		
225.0298	177-775	Quality Homes	Sandy Point Rd	Lot 5		87/ /28	1	1	1	400.0	5.00	209.00	3		2.50		3	2		
225.0055	177-218	Swale Corp	Sandy Point Rd		120.0	85/ 5/28	1	1	1	120.0	9.00	21.00	3		25.00		2	2		
225.0225	177-617	Quality Homes	Sandy Point Rd			87/ /01	1	1	1	200.0	4.00	20.00	3		6.00		6	2	CM:OB(6)=fill	
225.0096	177-349	Swale Corp	cnr Sandy Pt & Depot Rd			85/ 3/29	1	1	1	500.0	15.00		3		1.25		2	2		
225.0213	177-571	N. Bearsto	cnr Sandy Pt & Depot Rd			86/ /04	1	1	1	100.0	30.00	51.00	3		10.00		3	2		
225.0271	177-699	Security Homes Inc	Scammon Farms Rte 101			87/ /10	1	1	1	340.0	44.00	84.00	3		50.00		1-4	2		
225.0270	177-700	Security Homes Inc	Scammon Farms Rte 101			87/ /11	1	1	1	445.0	38.00	69.00	3		20.00		1-4	2		
225.0138	177-408	Perro Structures	Smith Farm Rd			86/ /24	1	1	1	220.0	11.00	26.00	3		7.00		4	2		
225.0139	177-407	Perro Structures	Smith Farm Rd			86/ /24	1	1	1	140.0	11.00	27.00	3		20.00		4	2		
225.0194	177-537	American Land	Squamscott Rd			86/ /02	1	1	1	860.0	38.00	52.00	3		30.00		4	2		
225.0193	177-538	American Land	Squamscott Rd	2		86/ /03	1	1	1	500.0	40.00	54.00	3		30.00		4	2		
225.0160	177-480	Pipers Ldg Gen Partnership	Strathan Cir & Rte 108			86/07/08	1	1	1	440.0	11.00	25.00	3		6.00		1	2		
225.0277	3-796	P. Chapman	Strathan Heights Rd	Lot 9		87/07/29	1	1	1	323.0	20.00	52.00	3	1.00	50.00		4	2		
225.0293	457-126-87	R. & N. Cady	Strathan Heights Rd	Lot 55		87/08/17	1	1	1	400.0	185.00	215.00	3	1.00	12.00		5	1	YL	
225.0133	177-431	D. Lawler	Strathan Heights Rd			86/05/20	1	1	1	360.0	39.00	60.00	3		2.50		2-6	2		
225.0306	457-247-87	C. Chapman	Strathan Hgts Rd			87/12/11	1	1	1	275.0	45.00	60.00	3	1.00	3.00		126	1	YL	
225.0190	177-521	Reed & Small	Strathan Woods	21		86/09/05	1	1	1	140.0	30.00	40.00	3		10.00		4	2		
225.0196	177-517	Reed & Small	Strathan Woods	24		86/09/04	1	1	1	360.0	50.00	100.00	3		30.00		4	2		
225.0004	177-15	J. Davis	Strathan Woods		40.0	84/04/11	1	1	1	100.0	5.00	21.00	3		20.00		4	3		
225.0199	177-516	Reed & Small	Strathan Woods	1E		86/09/03	1	1	1	620.0	55.00	100.00	3		20.00		4	2		
225.0230	177-635	Strathan Realty Trust	Sweester Farm			87/05/20	1	1	1	200.0	5.00	20.00	3		60.00		6	2		
225.0212	243-28	Burkridge Homes Bldrs	Sweetland Way	7		86/06/09	1	1	1	205.0	45.00	60.00	3	2.00	30.00	8.00	1	2		
225.0208	243-24	Burkridge Homes Bldrs	Sweetland Way	3		86/01/24	1	1	1	230.0	78.00	90.00	3	2.00	30.00	6.00	14	2		
225.0206	243-22	Burkridge Homes Bldrs	Sweetland Way	1		86/08/29	1	1	1	405.0	50.00	64.00	3	2.00	2.00	30.00	14	1	YL	
225.0210	243-26	Burkridge Homes Bldrs	Sweetland Way	5		86/01/31	1	1	1	255.0	69.00	82.00	3	2.00	35.00	10.00	14	2		
225.0211	243-27	Burkridge Homes Bldrs	Sweetland Way	6		86/06/05	1	1	1	230.0	37.00	50.00	3	2.00	10.00	8.00	14	2		
225.0207	243-23	Burkridge Homes Bldrs	Sweetland Way	2		86/01/27	1	1	1	255.0	58.00	72.00	3	2.00	3.00	15.00	14	2		
225.0209	243-25	Burkridge Homes Bldrs	Sweetland Way	4		86/05/30	1	1	1	155.0	36.00	50.00	3	2.00	24.00	5.00	14	1	YL	
225.0122	367-70	P. Grahame	Tall Pine Dr	4		86/09/03	1	1	1	120.0	30.00	48.00	3	0.17	8.00		1-2	2		
225.0291	406-1040	Hoyt Const	Tall Pine Rd			87/12/12	1	1	1	142.0	27.00	40.00	3	0.50	20.00		12	2		

[redacted]

225.0008	177-26	R. Blake	6 Tall Pines Dr			100.0	4/05/03	1	1	1	120.0	20.00	42.00	3		30.00		2	2	
[illegible]	204-214	S. Simonson	Tall Pines Dr			[illegible]	4/04/30	1	1	1	120.0	20.00	30.00	3	0.25	10.00	10.00	1	2	
225.0020	177-51	H. Pratt	Tall Pines Dr			[illegible]	4/06/13	1	1	1	120.0	30.00	42.00	3		50.00		2	2	
225.0013	204-221	J. Maylan	Tall Pines Dr			100	4/05/15	1	1	1	105.0	[illegible]	40.00	3	0.25	20.00	10.00	1	2	
[illegible]	[illegible]	[illegible]	Tall Pines Dr			[illegible]	/04/10	1	1	1	[illegible]	15.00	[illegible]	3	[illegible]	20.00	12.00	1	2	
[illegible]	[illegible]	[illegible]	Tall Pines Dr			[illegible]	/06/01	1	1	1	[illegible]	[illegible]	50.00	3	[illegible]	1.00		1	2	
[illegible]	177-50	[illegible]	Tall Pines Dr			[illegible]	/06/13	1	1	1	[illegible]	30.00	42.00	3		20.00		2		
[illegible]	[illegible]	Apex Realty Trust	Tidewater [illegible]		18		/08/[illegible]	1	1	1	[illegible]	34.00	[illegible]	3	0.75	10.00		34	2	
225.0104	177-453	Swale Corp	Tidewater Cove		17		/06/11	1	1	1	100.0	3.00	25.00	3		15.00		3	2	
[illegible]	[illegible]	Swale Corp	Tidewater Cove		7		/06/12	1	1	1	[illegible]	[illegible]	[illegible]	3		[illegible]		3	2	
225.0105	[illegible]	Swale Corp	Tidewater Devel		8		/06/11	1	1	1	80.0	3.00	25.00	3		50.00		3	2	
225.0250	446-725	Build Concepts	Tidewater Rd			100.0	7/01/16	1	1	1	142.0	20.00	40.00	3	0.50	50.00		1	2	YL
225.0226	177-438	Swale Corp	Tidewater Rd		10		7/05/22	1	1	1	123.0	6.00	27.00	3		50.00		3	2	
225.0166	177-465	P. Campion	Tidewater Rd		9		/06/16	1	1	1	100.0	9.00	21.00	3		25.00		2	2	
225.0203	177-568	A. Belaidi	Tidewater Rd		2		/12/10	1	1	1	140.0	12.00	21.00	3		5.00		4	2	
[illegible]	177-429	Garrett Corp	Tidewater Rd		6		/03/14	1	1	1	140.0	10.70	20.00	3		9.00		2	2	
225.0265	406-680	R. Guimet	Tidewater Rd		1	40	/12/14	1	1	1	202.0	15.00	20.00	3	0.75	7.00		1	2	
[illegible]	177-812	D. Allen	Tidewater Rd		Lot 3		3/04/11	1	1	1	100.0	20.00	31.00	3		30.00		14	2	
225.0[illegible]5	177-395	Develco	Traffic Circle				/01/17	1	1	1	100.0	15.00	30.00	3		25.00		4	2	
225.0[illegible]	177-396	Develco	Traffic Circle				/01/17	1	1	1	110.0	15.00	30.00	3		15.00		4	2	
[illegible]52	457-86-94	G. Bourassa	Union Rd	6	37-2		/07/19	1	1	1	[illegible]	15.00	41.00	3	1.00	12.00		2	2	YL
225.0[illegible]20	367-49	R. Clear	Union Rd		2		/07/11	1	1	1	100.0	30.00	41.00	3	0.17	12.00		2	2	
225.0038	604-94	R. Eldon	Union Rd			80.0	/09/20	1	1	1	150.0		21.00	3		3.00			3	
225.0109	177-358	N. Batchelder	139 Walnut Ave				/11/13	1	1	1	200.0	10.00	21.00	3		10.00		12	2	
225.0268	177-702	Swale Corp	Walter Way		Lot 4		7/09/14	1	1	1	100.0	30.00	42.00	3		20.00		2	2	
225.0248	177-703	Swale Corp	Walter Way		Lot 2		7/09/15	1	1	1	120.0	30.00	46.00	3		15.00		2	2	
225.0269	177-701	Swale Corp	Walter Way		Lot 3		7/09/14	1	1	1	340.0	30.00	42.00	3		30.00		2	2	
225.0276	406-925	J. LaRosa	Wedgewood Dr				7/08/21	1	1	1	102.0	38.00	46.00	3	1.00	10.00		1	2	
225.0307	177-805	Spectrum Homes	Wedgewood Dr		Lot 3		/03/23	1	1	1	120.0	20.00	42.00	3		60.00		4	2	
225.0273	457-129-87	M. Bird	Wedgewood Dr		Lot 5		7/08/18	1	1	1	300.0	24.00	43.30	3	1.00	8.00		13	1	YL
225.0260	177-693	DD Cook	Wedgewood Rd		Lot 4		7/09/04	1	1	1	100.0	14.00	21.00	3		60.00		1	2	
225.0158	177-478	Montrose Inc	Wiggins Farm				/07/09	1	1	1	160.0	8.00	20.30	3		27.50		6	2	CM:08(6)#wetlands
225.0159	177-479	Montrose Inc	Wiggins Farm Rd				/07/09	1	1	1	160.0	8.00	20.00	3		22.50		6	2	CM:08(6)#wetlands
225.0136	177-434	E. Scamman	Willow Brook Ave		1		/04/04	1	1	1	100.0	20.00	45.00	3		15.00		4	2	
225.0240	177-399	R. Scammon	Willowbrook Ave				/01/06	1	1	1	140.0	8.00	21.00	3		6.00		3	2	
225.0352	177-938	Aberdeen Realty Trust	off Willowbrook Rd		Lot 25		/10/21	1	1	1	180.0	15.00	40.00	3		20.00		4	2	
225.0353	177-939	Aberdeen Realty Trust	off Willowbrook Rd		Lot 1N		/10/21	1	1	1	160.0	20.00	40.00	3		30.00		4	2	
225.0354	177-964	Aberdeen Realty Trust	Willowbrook Rd		Lot 1		/01/03	1	1	1	200.0	10.00	21.00	3		8.00		4	2	
225.0151	457-86-85	W. O'Loughlin	Winding Brook		6		/07/11	1	1	1	475.0	28.00	41.00	3	1.00	5.00		1	2	YL
225.0150	457-86-86	Delta Const Co	Winding Brook		8		/07/11	1	1	1	250.0	30.00	41.00	3	1.00	10.00		1-4	2	YL
225.0059	177-187	Winding Brook Corp	Winding Brook Dr			30.0	/04/16	1	1	1	340.0	65.00	75.00	3		50.00		4	2	
225.0057	177-131	Swale Corp	Winding Brook Dr			60.0	/11/20	1	1	1	140.0	15.00	21.00	3		5.00		1	1	
225.0060	177-130	Swale Corp	Winding Brook D.			40.0	/11/20	1	1	1	140.0	6.00	21.00	3		8.00		2	1	
225.0058	177-186	Winding Brook Corp	Winding Brook Dr			30.0	/04/16	1	1	1	340.0	65.00	75.00	3		50.00		4	2	
225.0297	177-770	J. Roy	Winding Brook Rd		Lot 13		/12/01	1	1	1	200.0	12.00	21.00	3		6.00		4	2	
225.0283	177-753	C. Clark	17 Winnicut Rd		[illegible]		/[illegible]/03	1	1	1	140.0	25.00	41.00	3		50.00		12	2	
225.0278	1236-	Lamprey Bldrs	off Winnicut Rd		Lot 8		/08/29	1	1	1	225.0	40.00	53.00	3	1.00	4.00	7.00	34	2	
225.0279	1236-	Lamprey Bldrs	off Winnicut Rd		Lot 9		/08/28	1	1	1	165.0	30.00	67.00	3	1.00	5.00	9.00	4	2	
225.0326	177-849	Muirfield Realty Trust	Winnicut Rd		Lot 21		/05/31	1	1	1	100.0	18.00	42.00	3		50.00		2	2	
225.0264	177-683	American Land	Winnicut Rd				/08/18	1	1	1	140.0	20.00	55.00	3		30.00		12	2	
225.0267	177-681	American Land	Winnicut Rd				/08/12	1	1	1	320.0	62.00	84.00	3		20.00		4	2	
225.0320	177-807	L. Kane	Winnicutt Rd		Lot 129		/03/29	1	1	1	280.0	15.00	42.00	3		6.00		16	2	
225.0141	177-405	Orchard Homes	Winnicutt Rd		[illegible]		/01/23	1	1	1	360.0	14.00	26.00	3		30.00		4	2	
225.0131	177-439	M. D. F. Bldrs	Winnicutt Rd		14		/04/18	1	1	1	140.0	18.00	60.00	3		30.00		2	2	
225.0107	177-297	M & J Bldrs	Winnicutt Rd				/08/23	1	1	1	100.0	16.00	28.00	3		12.00		2	2	
225.0132	177-438	M. D. F. Bldrs	Winnicutt Rd		15		/04/17	1	1	1	140.0	12.00	25.00	3		15.00		2	2	
225.0140	177-404	Orchard Homes	Winnicutt Rd		2		/01/23	1	1	1	360.0	14.00	26.00	3		60.00		4	2	
225.0197	3-524	Bradgate Properties		16	31		/08/04	1	1	1	322.0	30.00	82.00	3	1.00	50.00		3	2	YL

WRB#	WELL#	NAME	ROAD	YLD	PUMP	ELEV	COMP	USE	RSN	TYPE	TOTD	EXCD	CASING	VIS	WD	WTC	SWL	OVERBURDEN	QC	NOTE
225.0149	457-96-84	Delta Triangle Const Co			34		96/07/09	1	1	1	300.0	25.00	30.00	3	1.00	5.00		1	2	YL
225.0183	177-561	K. Chase			25		87/10/24	1	1	1	505.0	8.00	20.00	3		25.00		4	2	
225.0294	143-34	Northwood Designs					87/04/14	1	1	1	160.0	18.00	30.00	3	1.00	10.00		3	2	

USER'S GUIDE FOR WELL COMPLETION REPORT DATA SUMMARIES (rev. 1/24/89)

Attribute	Explanation	Data Type, Codes and Definitions	Data Entry Conventions	Item Number on Well Completion Report
WELL#	Well driller's number	Text 15	[driller's license no.]-[sequence no.]	
WRB#	Water Resources Board I. D. number	Text 8	[3-digit numeric town code]-[4-digit sequence no.] town code must include leading zeros	
OPT#	Optional number for cross referencing	(Reserved)		
ELEV	Elevation	Real Number	in feet above sea level	
LAT	Latitude	Integer	6 digit number for degrees, minutes, and seconds with leading zeros included	
LONG	Longitude	Integer	6 digit number for degrees, minutes, and seconds with leading zeros included	
NAME	Well Owner, etc.	Text 26	first initial and last name for individuals; complete name for contractors or companies (consult "dictionary" for accepted abbreviations)	1
ROAD	Address of well location	Text 26	street name or reference point (consult "dictionary" for accepted abbreviations)	2
TOWN	Town in which well is located	Text 22	complete name of town (no abbreviations allowed)	2
MAP	Map page number as recorded on the town's tax map	Text 10	varies according to the coding system in use by a particular town; prefix BLK- indicates block number	2
PARCEL	Parcel identifier as recorded the town's tax map	Text 12	varies according to the coding system in use by a particular town	2
DCOMP	Date well was completed	Date	6-digit no. for year/month/day with leading zeros included	3
USE	Proposed use of well	Text 1 0=other 1=domestic 2=small community water supply 3=municipal 4=commercial 5=industrial 6=agricultural 7=institutional 8=test/exploration 9=abandoned		4
RSN	Reason for constructing well	Text 1 0=other 1=new 2=replace existing 3=deepen existing 4=provide additional supply 5=monitoring (water level measurement or water quality sampling) 6=stratigraphic observation only		5
TYPE	Type of well	Text 1 0=other 1=drilled in bedrock 2=drilled in gravel 3=dug 4=auger hole (any uncased hole) 5=driven point 6=undifferentiated		6
TOTD	Total depth of well	Real number	in feet below land surface datum	7
BDKD	Depth to bedrock	Real number	in feet below land surface datum	8
CASING	Total length of casing installed in well	Real number	in feet	9

Attribute	Explanation	Data Type, Codes and Definitions	Data Entry Conventions	Item Number on Well Completion Report
YTM	Yield test method	Text 1 1=bailed 2=pumped 3=compressed air		11
YTD	Yield test duration	Real number	in hours	11
YTQ	Discharge	Real number	in gallons per minute	11
SWL	Static water level	Real number (0.=overflowing .1=at ground level)	in feet below land surface datum	12
DMEAS	Date static water level was measured	Date	6-digit no. for year/month/day with leading zeros included	12
WQ	Water quality information	Text 1 Y="Yes" Laboratory analysis performed Null value (-0-)="no" or not reported		13
OB	Type of overburden material	Text 16 0=exposed bedrock 1=sand 2=gravel 3=till 4=clay 5=mixed 6=other		15

Codes are entered layer by layer in the sequence reported in the WELL LOG; successive layers are separated by a hyphen (for example, 12-4 indicates a sand and gravel layer overlying a clay layer; mixed is used if 1 through 4 are recorded on the same line; if "6" is used, an explanation is included as a comment under the attribute NOTE)

PI	Pump information	(keserved)		
QC	Subjective assessment of quality of reported information	Text 1 1=good 2=fair 3=poor		
NOTE	Special notes	Text 36 YL=yield log SN=screen information GP=gravel pack DD=drawdown measurements CM=comments		

"CM:" is used to explain any attribute coded as "other" [ie., CM:USE(0)=fire protection]

THE FOLLOWING ADDITIONAL CONVENTIONS APPLY AS NOTED:

1) no periods are permitted to follow abbreviations within text fields, except in the case of NAME where a period is required after the first initial
2) any attribute coded as "other" must be explained by means of a comment under NOTE; however, the code for any attribute can be qualified using a comment expressed in the standard format CM:attribute(code)=explanation as illustrated above
3) the 2-character NOTE codes must always be given in the order listed above and separated by a single space whenever multiple codes are needed (ie. SN GP and not GP SN)

Source: Water Resources Division,
N.H. Department of Environmental Services.

DATE: JUNE, 1988

TOWN: STRATHAM

PUBLIC WATER SYSTEMS INVENTORY
WATER SUPPLY ENGINEERING BUREAU
WATER SUPPLY & POLLUTION CONTROL DIV.
DEPARTMENT OF ENVIRONMENTAL SERVICES

MAP # SYMBOL	C* N*	EPA #	SYSTEM NAME	LATITUDE/LONGITUDE	OWNER'S NAME	OWNER'S MAILING ADDRESS	TOWN	TELEPHONE	SERVICE AREA
201	C	2232010	GLEN GARRY CONDOMINIUMS	0430250/0705219	WATERFORD PROPERTY MANAGEMENT	142 PORTSMOUTH AVE, BOX 232	STRATHAM	NH	30 ACRES
202	C	2232020	THORNHILL CONDOMINIUMS	0425914/0705324	THORNHILL CONDO ASSOCIATION	142 PORTSMOUTH AVENUE	STRATHAM	NH	17 ACRES
203	C	2232030	SALT RIVER CONDOMINIUMS	0430250/0705240	L.A. HANNA & SONS, INC.	313 PORTSMOUTH AVENUE	STRATHAM	NH772-2175	20 ACRES
204	C	2232040	WINDING BROOK CONDOMINIUMS	0430129/0705560	BAY REGION ASSOCIATES	7 EMERY'S LANE	STRATHAM	NH	40 ACRES
205	C	2232050	STRATHAM GREEN CONDOMINIUMS	0430140/0705505	DEVELCO OF STRATHAM, INC.	1 SIMON'S LANE	NEWMARKET	NH	35 ACRES
206	C	2232060	BALMORAL CONDOMINIUMS	0425943/0705256	SYMMES ASSOCIATES	3 SYMMES DRIVE	LONDONDERRY	NH926-9266	12 ACRES
207	C	2232070	MONTROSE CONDOMINIUMS	0430140/0705250	J & S REALTY, INC.	142 PORTSMOUTH AVENUE	STRATHAM	NH	25 ACRES
208	C	2232080	PHEASANT RUN CONDOMINIUMS	0430212/0705220	BRADGATE ASSOCIATES, INC.	74 NORTHEASTERN BLVD.	NASHUA	NH882-1307	10 ACRES
209	C	2232090	STRATHAM WOODS	0430059/0705523	REED & SMALL, INC.	8 BUTTERFIELD LANE	STRATHAM	NH778-1221	20 ACRES
210	C	2232100	PEAR TREE CONDOMINIUMS	0000000/0000000	COWEN	101 HIGH STREET	STRATHAM	NH	20 ACRES
211	C	2232110	SQUAMSCOTT RETIREMENT CONDOS	0000000/0000000	J.I.S.	142 PORTSMOUTH AVENUE	STRATHAM	NH	55 ACRES
501	N	2235010	ACORN SCHOOL	0430048/0705204		WINNICUTT ROAD	STRATHAM	NH7788285	1 BLDG.
502	N	2235020	STRATHAM MEMORIAL SCHOOL	0000000/0000000		BUNKER HILL ROAD	STRATHAM	NH772-5413	1 BLDG.
503	N	2235030	N.H. VOCATIONAL/TECH. COLLEGE	0430238/0705321		PORTSMOUTH AVENUE	STRATHAM	NH	1 BLDG.
504	N	2235040	DAY CARE CENTER	0000000/0000000					1 BLDG.
505	N	2235050	STRATHAM ELEMENTARY SCHOOL	0430202/0705308					1 BLDG.
601	N	2236010	KING'S HIGHWAY PLAZA	0425958/0705518	NATIONAL PROPERTY ANALYSTS	1804 RITTENHOUSE SQUARE	PHILADELPHIA	PA	1 BLDG.
602	N	2236020	MARKET BASKET	0425958/0705505	C/O P&P FOODS	EAST STREET	TEWKSBURY	MA851-7381	1 BLDG.
603	*	2236030	WALTER CHENEY REAL ESTATE	0430038/0705445		77 ELM STREET	NEWMARKET	MJ659-2754	1 BLDG.
604	N	2236040	BELL & FLYNN, INC.	0000000/0000000	JOHN FLYNN	7 BUNKER HILL AVENUE	STRATHAM	NH778-8511	NA
605	N	2236050	STRATHAM PLAZA	0000000/0000000	JEAN BEAUDREAU	37 PORTSMOUTH AVENUE	STRATHAM	NH772-8888	1 BLDG.
607	N	2236070	SHAW'S SUPERMARKET	0425946/0705518	CENTRAL DIVISION OFFICE	PORTSMOUTH AVE., BOX 389	STRATHAM	NH772-8886	1 BLDG.
609	N	2236090	ROCKINGHAM NEWSPAPERS	0000000/0000000					1 BLDG.
610	N	2236100	PIPER LANDING	0000000/0000000	SUSAN CONWAY	142 PORTSMOUTH AVENUE	STRATHAM	NH772-5877	1 BLDG.
611	N	2236110	INDUSTRIAL PARK	0000000/0000000	SUSAN CONWAY				1 BLDG.
701	N	2237010	STRATHAM HILL PARK	0000000/0000000	TOWN OF STRATHAM		STRATHAM	NH	100 ACRES
801	N	2238010	THE COMMONS AT STRATHAM	0430128/0705503					1 BLDG.
802	N	2238020	THE COOP	0430007/0705507	GEORGE ANDERSON	95 PORTSMOUTH AVENUE	STRATHAM	NH778-7738	1 BLDG.
803	*	2238030	STRATHAM CIRCLE FLORIST	0430100/0705456	LOUIS TERRAVECHIA	100 PORTSMOUTH AVENUE	STRATHAM	NH	1 BLDG.
804	N	2238040	THE CARRIAGE STALL	0430122/0705446	BLAIR KIRTLAND	143 PORTSMOUTH AVENUE	STRATHAM	NH772-2138	1 BLDG.
901	N	2239010	STRATHAM COMMUNITY CHURCH	0000000/0000000	STRATHAM COMMUNITY CHURCH	EMERY'S LANE	STRATHAM	NH772-3389	1 BLDG.
902	N	2239020	PARKER PARISH HALL/CONG. CHURCH	0430108/0705510		ROUTE 107	STRATHAM	NH	1 BLDG.
903	N	2239030	STRATHAM TOWN HALL	0430126/0705454					

MAP # SYMBOL	C* N*	EPA #	SYSTEM NAME	LATITUDE/LONGITUDE	OWNER'S NAME	OWNER'S MAILING ADDRESS	TOWN	TELEPHONE	SERVICE AREA
A	C		ABERDEEN WEST			WILLOWBROOK AVENUE	STRATHAM	NH	15 ACRES
B	N		ELEMENTARY SCHOOL			GIFFORD FARM ROAD	STRATHAM	NH	1 BLDG.
C	C		JEWETT HILL CONDOMINIUMS			WINNICUT AVENUE	STRATHAM	NH	85 ACRES
D	N		LIBRARY & FIRE			WINNICUT AVENUE	STRATHAM	NH	2 BLDGS.
E	N		SOMETHING SPECIAL				STRATHAM	NH	1 BLDG.
F	N		TOWN SQUARE				STRATHAM	NH	NA
G	C		WINDLESTRAW				STRATHAM	NH	NA
H	N		MEADOWVIEW			ROUTE 101	STRATHAM	NH	1 BLDG.
I	N		GIL'S JEEP & PEUGEOT			ROUTE 101	STRATHAM	NH	1 BLDG.

* N = Non-Community
C = Community
NA = Not Approved

APPENDIX III

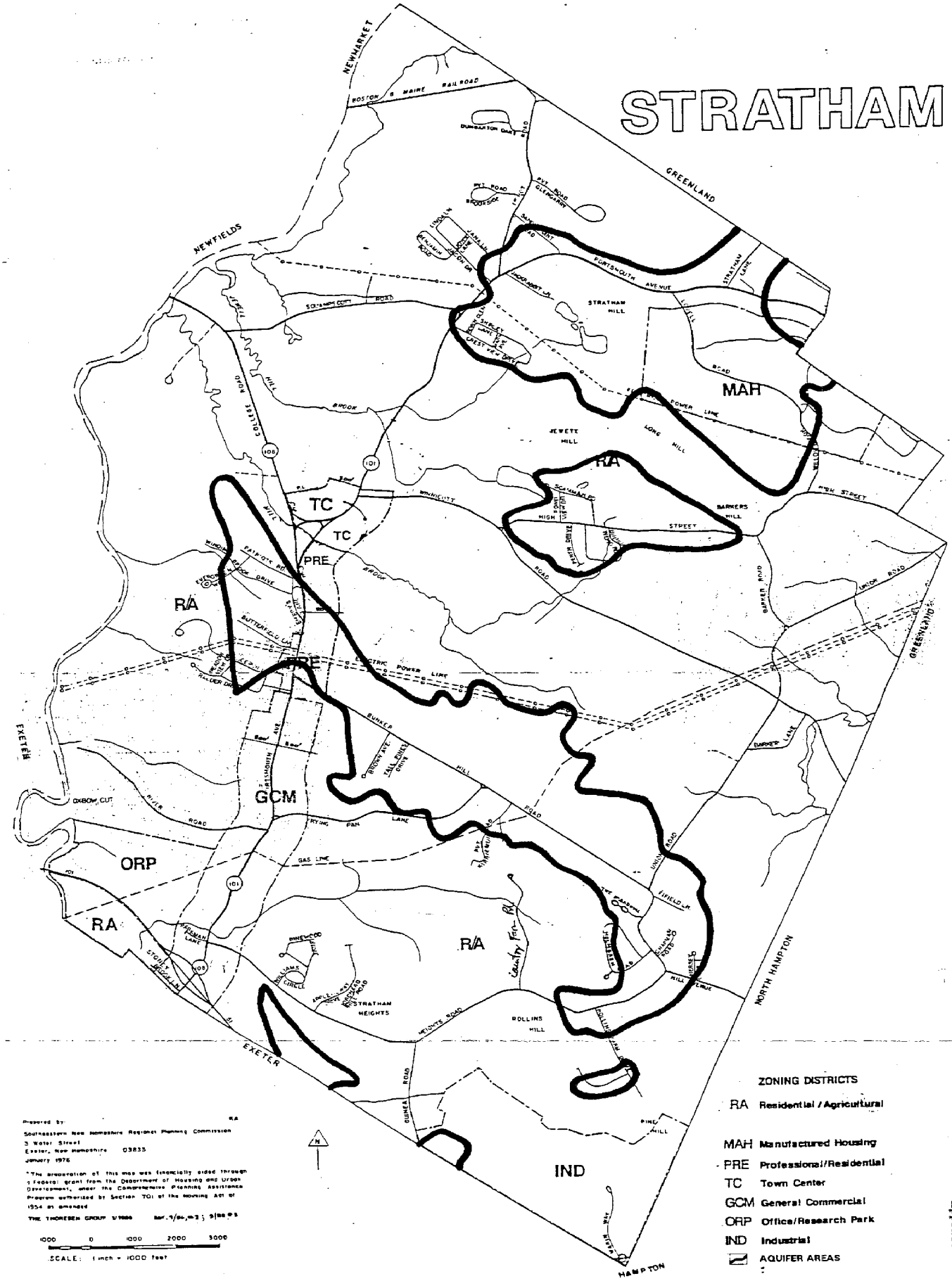
UPDATED BY RPC, JUNE 1990

UNDERGROUND STORAGE TANKS INFORMATION FOR STRATHAM, NH

MAP & CODE #	FACILITY LOCATION, NAME AND ADDRESS	NUMBER OF TANKS	TANK AGE	TANK CAPACITY	PRODUCT DESCRIPTION	MATERIAL OF CONSTRUCTION	TANK STATUS
1	C & E SERVICE STATION 39 PORTSMOUTH AVE.	4	21 21 16 21	8,000 5,000 4,000 2,000	GASOLINE GASOLINE GASOLINE DIESEL	STEEL STEEL STEEL STEEL	ACTIVE ACTIVE ACTIVE ACTIVE
2	CHARTER FUEL STOP PORTSMOUTH AVENUE	3	11	10,000	GASOLINE	STEEL	ACTIVE
3	USA, INC. 12 PORTSMOUTH AVENUE	1	9	1,000	USED OIL	STEEL	INACTIVE
4	KING'S HIGHWAY PLAZA ROUTE 101	1	1	3,000	FUEL OIL	STEEL	ACTIVE
5	L.A. HANNA & SONS, INC. 313 PORTSMOUTH AVENUE	2	11	6,000 2,000	DIESEL GASOLINE	STEEL STEEL	ACTIVE ACTIVE
6	LIONEL LABONTE, SUNOCO ROUTES 101 & 108	2 2	23 26	6,000 500	GASOLINE USED FUEL OIL	STEEL STEEL	INACTIVE INACTIVE
7	NH VOCATIONAL TECH. COL. 277 PORTSMOUTH AVENUE	1	5	10,000	FUEL OIL	STEEL	ACTIVE
8	STRATHAM MEMORIAL SCHOOL 10 BUNKER HILL AVENUE	1	3	10,000	#2 FUEL	STEEL	ACTIVE
9	SULLIVAN TIRE 54 PORTSMOUTH AVENUE	1	2	500	USED OIL	STEEL	ACTIVE
10	STRATHAM VILLAGE MARKET 157 PORTSMOUTH AVENUE	2	8	4,000 6,000	GASOLINE GASOLINE	STEEL*	ACTIVE

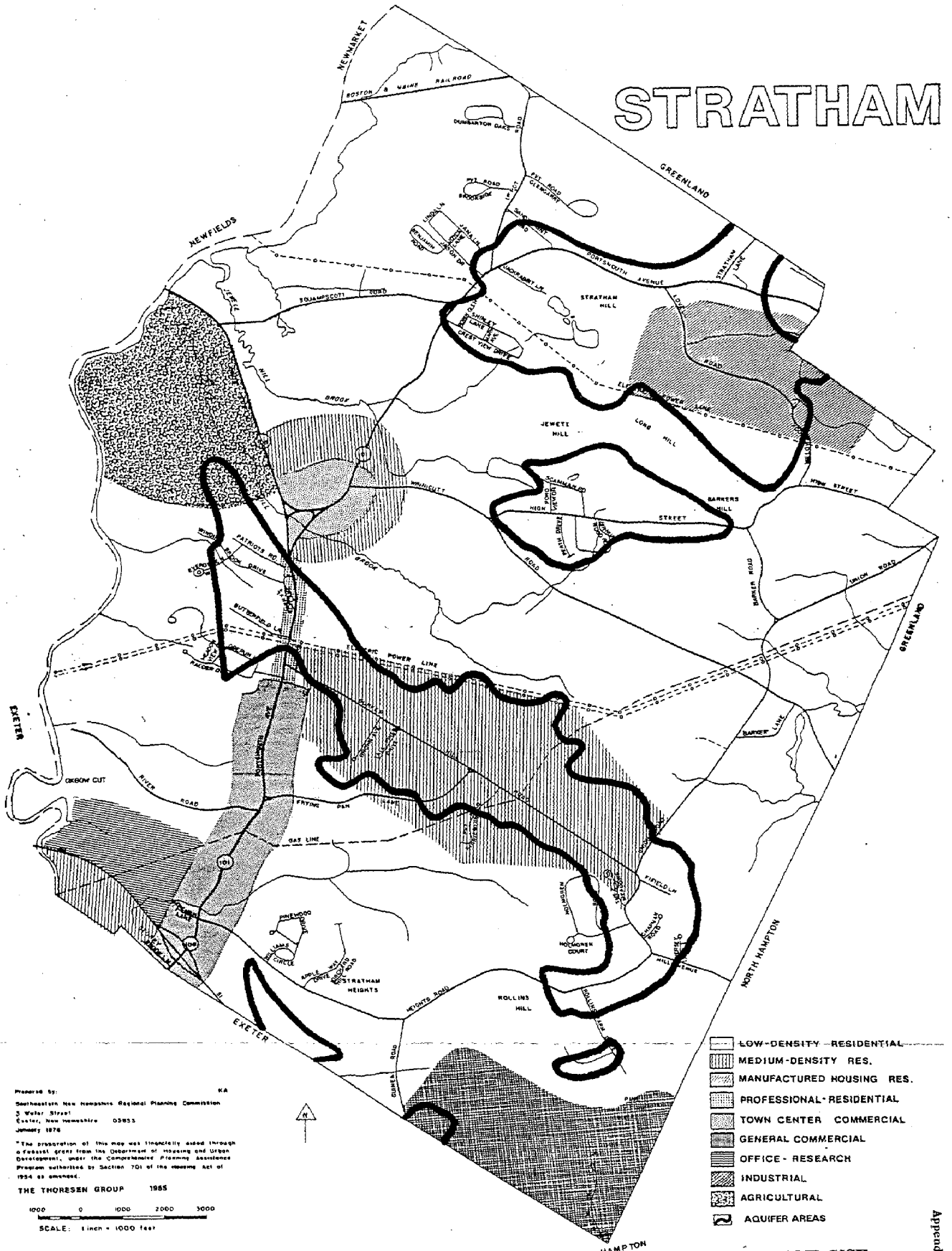
* With fiberglass lining.

Source: Groundwater Protection Bureau, Water Supply and Pollution Control Division, N.H. Dept. of Environmental Services



ZONING AND AQUIFER LOCATIONS

Appendix IV



FUTURE LAND USE AND AQUIFER LOCATIONS

Appendix V

NOAA COASTAL SERVICES CENTER LIBRARY
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